

# INDEX OF SUBJECTS.

## ABSTRACTS A, 1942.

An asterisk denotes a previous abstract.

### A.

- A.T. 10, treatment with, of tetany, mineral metabolism in, III, 118.  
See also Dihydrotachysterol.
- Abdomen, disease of, extrapancreatic, serum and urine diastase in relation to, III, 895.  
injuries to, compression, III, 754.  
meteorism of, III, 895.  
roentgenology of, III, 895.  
reflexes of, of peripheral origin, inversion of, III, 882.  
wall of, local rigidity of, III, 881.
- Abietic acid, dehydrogenation and hydrogenation of, II, 60.
- Aboriginals, Australian, physiology of, III, 285.
- Abortion, after grass pollen injection, III, 356.  
and stillbirth, categories of, III, 892.  
habitual and incipient, aetiology and treatment of, III, 603.  
recurrent, investigation and progesterone treatment of, III, 135.  
recurrent and threatened, treatment of, III, 689.  
treatment of, with stilboestrol, III, 890.
- Abscesses, brain. See under Brain.  
radioactive substances in, concentration and detection of, III, 334.
- Acacetin 7-acetate, II, 149.
- Acacia, effect of injection of, on renal function, III, 33.  
treatment with, of nephrotic syndrome, III, 461.
- Acanthite, crystallography of, I, 380.
- Acanthosis, produced by hormones, mitoses in, III, 286.
- Acanthosis nigricans, III, 324.  
with metastatic malignant growths of skin, III, 466.
- Accumulators, electric, lead, overvoltage and ozone production in, I, 208.
- 3-Acenaphthaldehyde, II, 407.
- 3:4-Aceperinaphthane, II, 407.
- 3:4-Aceperinaphthan-7-one, and its derivatives, II, 407.
- Acenaphthene series, II, 429.
- $\beta$ -3-Acenaphthylacrylic acid, and its derivatives, II, 407.
- $\beta$ -3-Acenaphthylpropionic acid, and its methyl ester, II, 407.
- Acetaldehyde, compound of, with bisulphites, structure of, II, 75.  
decomposition of, chain length and chain-ending processes in, I, 207.  
thermal, I, 300; II, 3.  
catalysed by hydrogen sulphide, I, 402.  
in presence of nitric oxide and of propylene, I, 402.  
liquid extraction of, from mixtures, I, 294.  
oxidation of, cold-flame, effect of peracetic acid on, I, 102.  
photolysis of, in presence of iodine, I, 304.  
semi-acetal in solutions of, in alcohols, I, 174.  
spectrum of, infra-red, I, 193.  
vapour, supersonic dispersion in, I, 261.
- Acetaldehyde, tribromo-, treatment with, bromine distribution in cats after, III, 924.
- Acetamide, spectra of, Raman, and its derivatives and its molecular structure, I, 315.
- Acetamide, trichloro-, spectrum of, Raman, I, 315.  
cyano-, addition of, to coumarins, II, 420.
- Acetamide, disubstituted derivatives, II, 77.
- Acetanilide, X-ray structure of, I, 230.
- Acetanilide, *p*-amino-, reaction of, with ethyl acetoacetate, II, 330.  
3-fluoro-, and 3-fluoronitro-, II, 51.  
2:4:6-triiodo-, II, 88.
- 4- $\delta$ -Acetanilido-4'- $\gamma$ -butadienylquinoline ethiodide, II, 239.
- 1- $\zeta$ -Acetanilido-4'- $\gamma$ -hexatrienylbenzthiazoline ethiodide, II, 154.
- Acet-*m*-anisidide, 2:4:5:6-tetrachloro-, II, 90.
- Acet-*p*-anisidide, X-ray structure of, I, 230.
- Acetbenzoxymethylamide, chloro-, pyridinium salt, II, 194.
- Acetic acid, derivatives, phenyl-substituted, ethyl esters, dipole moments of, I, 227.  
substituted, basic esters of, II, 194.  
determination in, of electro-reducible substances, I, 300.  
entropy of, I, 146, 399.  
equilibrium of, with acetone and water, I, 240.  
with lead acetate solutions, I, 393.  
esterification of, vapour-phase, I, 144.  
formation of, from acetoacetic acid by enzymes, III, 489.  
formation of acetone bodies from, III, 333.  
heats of mixing of ethyl alcohol, ethyl acetate, and I, 267.  
molar volumes of, and its sodium salt, I, 293.  
origin of, produced by acetylation, III, 258, 835.  
solubility of mixtures of, with its ethylidene ester and water, I, 202.  
with its vinyl ester and water, I, 63.  
spectrum of, Raman, and its mixtures and solutions, I, 315.
- Acetic acid, aluminium salt, N.F. solution, aluminium citrate solution as substitute for, III, 711.
- chromic salt, double shelled complexes of, I, 275.
- cupric salt, adsorption of isomeric dyes by growing crystals of, I, 94.
- rare-earth salts, electrolysis of, I, 178.
- silver salt, activity coefficient of, in dioxan-water mixtures, I, 62.  
solubility of, in aqueous acetates, I, 366.  
in aqueous silver perchlorate and nitrate, I, 366.
- Acetic acid, 1-acetylcyclohexyl ester, II, 327.
- 2:6-dichlorophenyl ester, II, 283.
- methyl ester, miscibility of, with carbon disulphide, I, 201.  
photolysis of, I, 108, 245.  
methylcyclohexyl and tolyl esters, saponification of, I, 243.
- p-p'*-nitrobenzamidophenyl ester, II, 258.
- polyvinyl ester, alcoholysis of, I, 150.  
alkaline saponification of, I, 68.  
electrical properties of, I, 43.
- terpinyl ester, determination of, II, 292.
- vinyl ester, fractionation and size distribution in polymerides of, I, 58.  
solubility of mixtures of, with acetone and water, I, 202.
- Acetic acid, amino-, and chloro-, *l*-menthyl esters, II, 313.  
bromo-, chloro-, and iodo-, reaction of, with water, I, 332.
- Acetic acid, tribromo-, treatment with, bromine distribution after, in cats, III, 924.  
chloro-, polyvinyl ester, electrical properties of, I, 43.  
*mono*- and *tri*-chloro-, phenylhydrazine salts, II, 215.  
*dichloro*-, hydrolysis of, I, 104.  
*trichloro*-, mercurous and quinol salts, electric polarisation of, I, 387.  
propyl esters, chlorination of, II, 129.  
hydroxy-, benzoyl derivative, phenyl and phenylmethyl esters, II, 3.  
iodo-, effect of, on brain metabolism, III, 213.  
on brain respiration of rats, III, 834.  
on cystine content of rats, III, 541.  
on muscle, III, 671.  
phenylmethyl ester, II, 3.  
*o*-iodohydroxy-, benzoyl derivative, ethyl ester, II, 311.  
*di-o*-iododihydroxy-, dibenzoyl derivative, ethylene glycol ester, II, 311.  
thiol-, complex of, with dehydroascorbic acid, II, 187.
- Acetic-orcein, staining with, of chromosomes, III, 7.
- Acetmethylamide semihydrochloride, II, 236.
- 3-Acetmethylamido-*p*-toluidine, II, 330.
- Acet-6-nitro-4-methoxy-*m*-toluidide, II, 374.
- 5-Acetoacenaphthone,  $\omega$ -iodo-, and its derivatives, II, 57.
- 3-Acetoacetamidoquinaldine, II, 31.
- 4-Acetoacetamidoquinaldine, II, 30.
- Acetoacetanilide, *p*-amino-, acetyl derivative, II, 330.
- Acetoacetic acid, esters,  $\alpha$ -substituted, condensation of, with phenols, II, 268.  
ethyl ester, condensation of, with chloral, II, 215.  
with *o*-phenylenediamine, II, 238.  
introduction of *tert*-.butyl into, II, 215.  
reaction of, with *p*-aminoacetanilide, II, 330.  
formation from, of acetic acid, by enzymes, III, 489.  
ratio of  $\beta$ -hydroxybutyric acid to, III, 475.
- Acetoacet-*o*-nitroanilide, II, 238.
- Acetobacter turbidans*, III, 421.
- $\alpha$ -Acetobromo-*D*-manno-*D*-galaheptose, II, 218.
- $\alpha$ -Acetochloro-*D*-altrose, II, 80.
- $\alpha$ -Acetochloro-*D*-manno-*D*-galaheptose, II, 218.
- 5-Aceto-3-ethylbenzoic acid, and its methyl ester, II, 141.
- Acetoin, biochemically prepared, optical activity of, III, 555.
- Acetomesitylene, 3-bromo-, II, 93.
- 4-Aceto-1-methylcoumarin, and its oxime, II, 373.
- 1-Aceto-2-methylnaphthalene, II, 94.
- Acetone, adsorption of, by nitrocelluloses, I, 263.  
conversion of, into isoprene, II, 70.  
decomposition of, photochemical, I, 179.  
in presence of mercury, I, 68.  
thermal, in presence of diacetyl, I, 105.  
iodine catalysis of, I, 176.  
determination of, III, 76.  
spectro-photometrically, II, 387.  
equilibrium of, with acetic acid and water, I, 240.  
with chloroform and water, I, 240.  
formation of, by fermentation, III, 34  
heat of combustion of, I, 100.

- Acetone, miscibility of, with carbon disulphide, I, 19.  
reduction of, electrolytic, II, 76.  
semicarbazones, substituted, II, 169.  
solubility of mixtures of, with vinyl acetate and water, I, 202.  
spectrum of, infra-red absorption, I, 6.  
velocity of sound in, at high frequencies, I, 49.
- Acetone, chloro-, reaction of, with potassium cyanide, II, 326.
- Acetone bodies, excretion of, effect of *dl*-lysine hydrochloride on, III, 331.  
formation of, from acetic acid, III, 333.
- Acetonuria, III, 899.
- Acetylacetonate, cyano-, derivatives of, II, 326.
- 1-Acetylphenobarbital, and its 2:4-dinitrophenylhydrazones, II, 180.
- 2-Acetylthiol-4-methylthiazole, and its hydrochloride, II, 36.
- Acetyltrimethylammonium picrate, II, 165.
- Acetophenone, bromination of, photochemical, I, 273.  
condensation of, with derivatives of *o*-hydroxybenzaldehyde, II, 18.  
polarographic waves in mixtures of benzylideneacetone and, I, 24.  
volatility, vapour pressures, and diffusion coefficients in mixtures of Novolac and, I, 263.
- Acetophenone, *p*-amino-, 2:4-dinitrophenylhydrazones, II, 378.  
*aaa*-tribromo-, II, 314.  
2-bromo-5-amino- and -nitro-, and their derivatives, II, 16:  
4-bromo-3:5-dinitro-, II, 424.  
chloro-, dermatitis from, III, 721.  
2:4:5- and 2:4:6-trichloro-, II, 99.  
3:5-dichloro-4-hydroxy-, II, 283.  
*o*-fluoro-, and its derivatives, II, 66.
- Acetopyruvic acid. See *α*-Diketo-*n*-valeric acid.
- Acetovanillone β-cellobioside, and its heptaacetate, II, 134.
- Acetyl chloride, and chloro-, hydrolysis of, I, 332.  
hydrolysis of, I, 369.  
derivatives, Raman spectra of, I, 83.  
fluoride, synthesis of, and its derivatives, II, 344.
- Acetylacetone, *aa*-dichloro-, and its copper salt, II, 394.
- β-Acetyl-*α*-acetoxy-*αδ*-dimesityl-*Δ*<sup>a</sup>-buten-3-one, II, 144.
- Acetylation of amino- and hydroxy-groups, II, 339.
- 4-Acetylbenzofuran, 3-hydroxy-, II, 112.
- 4-Acetyl-2-benzyldecahydroisquinoline, and 10-hydroxy-, and their derivatives, II, 270.
- N<sup>4</sup>-Acetyl-N<sup>1</sup>-*α*-bromobutyrylsulphanilamide, II, 120.
- 9-Acetylcarbazole, 3-cyano-, and 1-nitro-, II, 424.
- N<sup>4</sup>-Acetyl-N<sup>1</sup>-*α*-chloroacetylsulphanilamide, II, 120.
- Acetylcholine, action of, III, 769.  
convulsant, III, 674.  
on adrenaline output, blood-sugar, and splanchnic nerves in dogs, III, 229.  
on blood pressure, III, 163.  
on central nervous system, intrathecally injected, in man, III, 882.  
in insect nervous system, III, 584.  
in intestinal tract, III, 242.  
in nasal mucosa, effect of oestrogen on, III, 132.  
liberation of, from intestine after nerve stimulation, effect of sodium ethylisobutylbarbiturate on, III, 708.  
potential of, in solutions, I, 241.  
potentiation of, by alcohol and ether, III, 163.  
sensitivity to, of muscles, effect of alcohols on, III, 298.  
succinate, slow-acting, III, 411.  
synaptic transmission by, in spinal cord, III, 210.  
synthesis of, biological, III, 703.  
tissue-, III, 379.
- Acetylcholine-esterase, in development of human foetus, III, 554.  
in serum in health and disease, III, 512.
- Acetyldehydroexoglycyrhetic acid, methyl ester, II, 418.
- Acetyldihydro-β-elemolic acid, methyl ester, II, 267.
- 6-Acetyl-3:5-diacetoxy-2:4-dimethylcoumaran-1-one, II, 30.
- 4'-Acetyl-*αβ*-diethylstilbene, 4-hydroxy-, II, 58.
- Acetyldiethylthiophens, and their derivatives, II, 62.
- N-Acetyl-*sec*-*ψ*-dihydrobrucine, II, 291.
- 3-Acetyldihydrocoumarin-4-cyanoacetamide, II, 420.
- Acetyldihydro-β-elemolaldehyde, and its derivatives, II, 267.
- Acetyldihydro-β-elemolyl chloride, II, 267.
- 1-Acetyl-10:11-dihydrophenanthro[1, 2-*b*]furan, 2-hydroxy-, II, 318.
- N-Acetyl-N<sup>4</sup>-dimethylbenzidine methiodide, and its diiodide, II, 280.
- 4-Acetyl-2:7-dimethylcoumaran-1-one, 3:5-dihydroxy-, and its diacetate, II, 30.
- Acetyl-1:2-dimethylindoles, and their 2:4-dinitrophenylhydrazones, II, 377.
- 4'-Acetyl-3:3'(or 4)-dimethylpyrromethene, 5-hydroxy-, II, 333.
- 4'-Acetyl-3:3'(or 4)-dimethylpyrromethene-5'-azobenzene, 5-hydroxy-, II, 333.
- 4-Acetyl-3:3'-dimethylpyrromethene-4'-propionic acid, 5-bromo-, hydrobromide, II, 427.
- 4'-Acetyl-3:3'-4-dimethylpyrromethene-3-propionic acid, 5'-amino-5-hydroxy-, methyl ester, and 5-hydroxy-, II, 333.
- 4'-Acetyl-3:3'-4-dimethylpyrromethene-3-propionic acid-5'-azobenzene, 5-hydroxy-, methyl ester, II, 333.
- α*-5-Acetyl-2:4-dimethyl-3-pyrrolacrylic acid, II, 380.
- N<sup>4</sup>-Acetyl-N<sup>1</sup>N<sup>4</sup>-dioleilsulphanilamide, II, 307.
- ε*-Acetyl-*δγ*-diphenyl-*ζ*-9-fluorenylhexan-β-one, II, 19.
- Acetylene, catalytic hydrogenation and polymerisation of, mixed with hydrogen, II, 213.  
derivatives, spectra of, Raman, I, 83.  
formation of, by electric discharge in wood gas, I, 371.  
oxidation of, catalytically, I, 271.  
polymerisation of, I, 301.
- Acetylenes, phenyl-substituted, reduction of, at dropping mercury cathodes, I, 400.  
reduction of, to olefines with iron catalysts, II, 213.  
spectra of, Raman, I, 227.  
substituted, and their derivatives, II, 71, 327.
- Acetylenic compounds, hydrogenation of, II, 13.
- Acetylenic radicals, migration of, in transpositions, II, 295.
- 1-Acetylenylcyclohexan-1-ol, II, 268.
- 1-Acetyl-2-*γ*-ethoxy-*Δβ*-propenylpiperidine, II, 38.
- α*-Acetyl-*γ*-ethyl-*Δ*<sup>a</sup>-*n*-hexenoic acid, ethyl ester, II, 130.
- α*-Acetyl-*γ*-ethyl-*Δ*<sup>a</sup>-*n*-octenoic acid, ethyl ester, II, 131.
- 2-Acetyl-ethylresorcinol, coumarins from, II, 109.
- 5-Acetyl-2-ethylthiophen, and its *p*-nitrophenylhydrazones, II, 62.
- Acetylglycosyl halides, condensation of, with sugar acetates, in relation to Walden inversion, II, 80.
- α*-Acetyl-*α*(5)-glyoxalylmethylbutyrolactone, synthesis of, and its salts, II, 240.
- Acetylcyclohexene, self-condensation of, II, 285.
- α*-Acetyl-*Δ*<sup>a</sup>-*n*-hexenoic acid, ethyl and isopropyl esters, II, 130.
- Q*-Acetyl-*l*-hydroxyproline, II, 339.
- α*-Acetyl-β-2-ketocyclohexylpropionic acid, ethyl ester, II, 318.
- Acetyl-21-keto-oleanolic acid, methyl ester, II, 418.
- Acetylmethylcarbinol, detection of, in bacterial cultures, III, 422.  
in bacterial fermentation, III, 851.
- Acetyl-β-methylcholine. See Mecholyl.
- 6-Acetyl-4-methylcoumarin, 8-bromo-5-hydroxy-, II, 236.
- 3-Acetyl-8-methylcoumarin, 7-hydroxy-, II, 420.
- 4-Acetyl-2:3'4'-methylenedioxymethyldecahydroisquinoline, 10-hydroxy-, II, 270.
- 6-Acetyl-4-methyl-8-ethylcoumarin, 5-hydroxy-, II, 236.
- 4'-Acetyl-*α*-methyl-β-ethylstilbene, 4-hydroxy-, and its acetyl derivative, II, 58.  
biological activity of, III, 132.
- α*-Acetyl-8-methyl-*Δ*<sup>a</sup>-*n*-hexenoic acid, isopropyl ester, II, 130.
- 5-Acetyl-6-methyl-2-pyrone, 5-*ω*-chloro-, II, 29.  
5-hydroxy-, acetyl derivative, II, 29.
- 4-Acetyl-3-methylpyrrole, and its derivatives, II, 427.
- 4-Acetyl-3-methylpyrrole-2-azobenzene, II, 427.
- 4-Acetyl-3-methylpyrrole-2:5-dicarboxylic acid, II, 427.
- 5-Acetyl-4-methylthiazole, and its derivatives, II, 384.
- 2-Acetyl-1-phenyl-*Δ*<sup>4</sup>-cyclohexene, and its oxime, II, 261.
- Acetylphenylhydrazine. See Pyrocin.
- 3-Acetyl-2-phenylindole, and its 2:4-dinitrophenylhydrazones, II, 377.
- β-(2-Acetyl-4-isopropylcyclopentyl)butyric acid, and its *p*-phenylphenacyl ester, II, 417.
- Acetylpyridine, 2:3-diamino-, 2-amino-3-bromo-, -3-chloro-, and -3-hydroxy-, and their derivatives, II, 113.
- 2-Acetylpyrophosphorobide-*a*, II, 383.
- 5-Acetylisoquinoline, semicarbazone, II, 378.
- Acetylretene, 3-hydroxy-, acetyl derivative, II, 227.
- Acetylsaccharin, reaction of, with semicarbazide, II, 335.
- Acetylsalicylic acid, absorption of, from stomach and intestine, effect of certain compounds on, III, 261.  
action of, compared with calamate, III, 483.  
on gastric activity, III, 316.  
on nitrogen metabolism and plasma carbon dioxide-combining power in dogs, III, 337.  
calcium salt. See Calamate.  
saponification of, I, 148.  
See also Aspirin.
- O*-Acetyl-*dl*-serine, II, 340.
- 2-N<sup>4</sup>-Acetylsulphanilamide, II, 33.
- N<sup>4</sup>-Acetylsulphanilamidoguanidine, II, 289.
- 3-N<sup>4</sup>-Acetylsulphanilamido-1:2:4-triazole, II, 289.
- 2-N<sup>4</sup>-Acetylsulphanilimido-3-N<sup>4</sup>-acetylsulphanilamidothiazolidine, II, 153.
- 3-Acetylthiol-2-methylindole, II, 423.
- O*-Acetyl-*dl*-threonine, II, 340.
- Acetyl-2:4:6-trimethyl-desylamine, II, 407.
- 4'-Acetyl-3:3':5'-trimethyl-4-ethylpyrromethene, 5-bromo-, hydrobromide, and 5-hydroxy-, II, 427.
- 6-Acetyl-1:3:5-trimethyl-2-ethyltripyrrene-4-propionic acid, 1-hydroxy-, methyl ester, hydrobromide, II, 334.
- 4'-Acetyl-3:3'(or 4):5'-trimethylpyrromethene, 5-hydroxy-, II, 333.
- 4-Acetyl-3:3':5'-trimethylpyrromethene-4'-propionic acid, methyl ester, hydrobromide, II, 427.
- 4'-Acetyl-4:3':5'-trimethylpyrromethene-3-propionic acid, 5-hydroxy-, methyl ester, II, 333.
- O*-Acetyl-*l*-tyrosine, II, 339.
- 3-Acetylmuracil, 5-bromo-, II, 272.
- α*-Acetylvaleric acid, *γ*-hydroxy-*γ*-cyano-, *γ*-lactone, and its *p*-nitrophenylhydrazones, II, 326.
- Achlorhydria, essential, diagnosis, incidence, and significance of, III, 456.  
gastric observations in, III, 456.  
hydrochloric acid in, glutamic acid hydrochloride as substitute for, III, 142.
- Achlya*, sex hormones in, III, 654.
- Achlya bisexualis*, growth hormone-*A* of, III, 654.
- Achondroplasia foetalis, III, 281.
- Achromotrichia, nutritional, in rats, III, 911.  
treatment of, with cystine, III, 40.  
See also Fur, greying of.
- Acids, acyclic, spectra of, absorption, ultra-violet, and light sensitivity of their silver salts, I, 404.  
adsorption of, by animal charcoal, I, 395.  
aliphatic, bromination of, and their acyl derivatives, II, 2.  
ethyl esters, acid-catalysed hydrolysis of, I, 176.

- Acids, aliphatic, salts, reaction of, with bromine, II, 344.**  
    $\alpha$ -substituted, II, 74.  
   aromatic, Kolbe synthesis with, II, 360.  
   esters, preparation of, from aryl methyl ketones, II, 404.  
   sterilising action of, III, 61.  
   dibasic, determination of, potentiometrically, in dioxan-water mixtures, I, 306.  
   polybasic, adsorption of, by sugar charcoal, I, 55.  
   branched-chain fatty, I, 297.  
   carboxylic, aliphatic, ammonium salts of, I, 111.  
     characterisation of, as carbamides, II, 254.  
     esters, alkyl-oxygen fission in, II, 391.  
     ionisation of, I, 99.  
   dicarboxylic, preparation of, in civetone synthesis, II, 393.  
   classification of, in organic analysis, II, 339.  
   disposal of fumes of, in wet assaying, I, 159.  
   exchange and transfer equilibria of bases, salts, and, in deuterium oxide-water mixtures, I, 144.  
   fatty, biological degradation of, by methyl oxidation, II, 131.  
     branched-chain, ketogenic action of, III, 333.  
     chemistry of, II, 186.  
     deficiency of, effect on, of pyridoxine, III, 40.  
     deuterium-containing, electrolysis of, I, 273.  
     f.p. of, effect of water on, I, 359.  
     halogenation of, II, 193, 346.  
     higher, separation of, II, 44.  
     identification and separation of, II, 46.  
     methylated, synthesis of, II, 163.  
     salts, solutions of, I, 16.  
   saturated, mixed, expansion of unimolecular layers of, I, 203.  
   sodium salts, vapour pressures and osmotic coefficients of solutions of, I, 174.  
   spectra of, far ultra-violet, I, 132.  
   unsaturated, enzymic oxidation of, carbonyl compounds from, II, 277.  
     esters, reaction of, with maleic anhydride, II, 186.  
     oxidation of, by enzymes, II, 73.  
   volatile, determination of, II, 212.  
   long-chain, II, 163, 346.  
   containing quaternary carbon atom, II, 345.  
   mixed, neutralisation of, I, 239.  
   organic, II, 297.  
    $n$ -alkyl, b.p. of, I, 392.  
   detection of, with  $p$ -bromobenzyl- $\psi$ -thiuronium bromide, II, 129.  
   identification of, by phenylhydrazides, II, 215.  
   partition ratios of, between water and ethyl ether, I, 141.  
   oxygen-active, autoxidation of, II, 277, 297, 346, 392.  
   polyene, isomerisation of, II, 130.  
   proton transfer concept of bases and, I, 205.  
   sterically hindered, esterification of, II, 14.  
   strong, determination of, in glacial acetic acid solution, volumetrically, I, 338.  
   velocity of electrophoresis of, I, 331.  
   synthesis of, II, 247.  
   unsaturated, reaction of, with thiocarbamide, II, 426.  
   weak, undissociated, activity coefficients of, I, 145.  
**Acid anhydrides.** See Anhydrides.  
**Acid chlorides, hydrolysis of, I, 369.**  
**Acidity, detection of, I, 338.**  
**Acidolysis, kinetics of, I, 242.**  
**Acidosis, diabetic, III, 704.**  
   peripheral circulatory failure in, III, 14.  
   treatment of, with thiamin chloride, III, 470.  
**Acne, adolescent, treatment of, with pyridoxine, III, 910.**  
   bacilli of. See under Bacilli.  
   male hormone substance in, III, 605.  
   scars after, cryotherapy for, III, 484.  
**Acne vulgaris, as pustular lipoidosis, treatment of, by low-fat diet and thyroid extract, III, 474.**  
**Acne vulgaris, treatment of, with liver extract, in tuberculous case, III, 928.**  
   with X-rays, III, 486.  
   with testosterone, III, 315.  
   with tuberculin, in tuberculosis, III, 855.  
**Aconitase, action of, in presence of deuterium oxide, III, 715.**  
   enzymic system of, III, 716.  
   in placenta, III, 716.  
   poisoning of, III, 716.  
**Aconite alkaloids, II, 40, 335.**  
**Aconitic acid, depolymerisation of, II, 216.**  
**Aconitum heterophyllum, alkaloids from, II, 335.**  
**Aconitias meleagris, skull of, III, 77.**  
**Acoustics, trauma produced by, in man, III, 227.**  
**Acetaldehyde, condensation of, with alkoxybutadienes, II, 261.**  
**Acridine, derivatives, bacteriostatic values of, III, 421.**  
   hydrogenation of, II, 115.  
**Acridine, amino-derivatives, antiseptic action of, III, 718.**  
   synthesis of, II, 425.  
   chloroamino-derivatives, II, 237.  
   chloroamino- and chloronitro-derivatives, II, 289.  
   1-hydroxy-, chelate properties of, II, 32.  
**Acridine series, chemotherapy in, II, 237, 289.**  
**Acridine-7-sulphonamide, 2-amino-, II, 180.**  
**Acridone, chloro-amino- and -nitro-derivatives, II, 237.**  
   8-chloro-2-amino-, 6-chloro-3-nitro-, and 8-chloro-2-nitro-10-hydroxy-, II, 289.  
**Acriflavine, antibacterial action of, III, 344.**  
   determination of, II, 292.  
   diffusion of, III, 917.  
   treatment with, of tularemia, III, 411.  
**Acrocyanosis, treatment of, with histamine iontophoresis, III, 928.**  
**Acrodynia, due to infected tonsils and adenoids, III, 516.**  
   fat metabolism in, in rats, III, 834.  
**Acromegaly, hyperparathyroidism in, III, 808.**  
   thyroid in, III, 594.  
   with diabetes, ocular disturbances in, III, 519.  
**Acropachyderma, with pachyperiostitis, III, 566.**  
**Acrylic acid, alkyl esters, co-polymerisation of, with alkyl maleates, II, 391.**  
   1-menthyl ester, II, 392.  
**Acrylic acid,  $\alpha$ -chloro-,  $d$ -sec-butyl ester, peroxide-catalysed polymerisation of, I, 150.**  
**Acrylonitrile, inflammability of, in air, I, 242.**  
   toxicology of, III, 635.  
**Actinobacillosis, treatment of, with sodium iodine in cattle, III, 413.**  
**Actinomyces, activity of, effect of plant by-products on, III, 423.**  
   staining of, in potato tissue, III, 74, 491.  
**Actinomyces antibioticus, actinomycin from, II, 242.**  
**Actinomyces hominis, cultures, effect on, of sulphonamides, III, 642.**  
**Actinomycin, and its derivatives, II, 242.**  
   toxicity of, III, 49, 636.  
**Actinomycin-A, effect of, on bacterial fibrinolysis and plasma coagulation, III, 648.**  
**Actinomycosis, cervical, treatment of, with sulphanilamide, III, 480.**  
**Active substances, I, 240.**  
**Activity coefficients, of bivalent metal nitrates, I, 328.**  
   of strong electrolytes, I, 328.  
**8'-Acylamino-2'-hydroxynaphthalene-1'-azo-benzene-2,5-disulphonic acids, sodium salts, anaphylactic action of, III, 498.**  
**Acyloxanthrones, reaction of, with Grignard reagents, II, 228.**  
**3-Acylpyrenes, Willgerodt reaction with, II, 50.**  
**4-Acyresorcinols, condensation of, with ethyl acetoacetate and aluminium chloride, II, 235.**  
**Adamantinoma, sensitivity of, to rays, III, 486.**  
   suprapituitary eunuchism and, III, 219.  
**Adaptometer, visual, portable, III, 223.**  
**Addison's disease, III, 381.**  
   diagnosis of, III, 120, 745.  
   electrolyte balance in, effect of adrenal cortical extract, deoxycorticosterone, and added potassium on, III, 745.  
**Addison's disease, glucose tolerance in, effect of deoxycorticosterone acetate on, III, 685.**  
   renal function in, III, 382.  
   sodium chloride restriction test in, III, 685.  
   treatment of, III, 120.  
   with adrenal cortex extract, III, 745.  
   with deoxycorticosterone acetate, III, 888.  
   unusual case of, III, 382.  
   with meningitis, treatment of, with adrenal cortical hormone and sulphapyrimidine, III, 920.  
**Adenine, antislulphonamide action of, III, 838.**  
   determination of, II, 160.  
**Adenium oleifolium, pharmacology of, III, 337.**  
**Adenocarcinoma, stomach. See under Stomach.**  
**Adenocarcinoma, preputial gland. See under Glands, preputial.**  
   prostate. See under Prostate.  
   stomach. See under Stomach.  
   uterine. See under Uterus.  
**Adenofibromyomata, uterine, after castration in guinea-pig, III, 236.**  
**Adenomas, benign, gastric mucosa in, III, 753.**  
   chromophobe, in Simmond's disease, III, 452.  
**Adenosine deaminase. See under Deaminase.**  
**Adenosine-5'-phosphoric acid, determination of, III, 183.**  
**Adenosinetriphosphate, myosin and, III, 642.**  
**Adenyl compounds, pharmacology of, III, 164.**  
**Adenylic acid, muscle- and yeast-, treatment with, of pellagra and neuritis in malnutrition, III, 539.**  
**Adenylpyrophosphoric acid, myosin birefringence and, III, 207.**  
 **$N^4N^4$ -Adipdi(sulphanilamidoguanidine), II, 429.**  
**Adipic acid, electrolysis of, with nitrates, II, 216.**  
   formation of, from diaminocarboxylic acid of biotin, II, 131.  
**Adipose tissues. See under Tissues.**  
**Adiposogenital dystrophy. See Fröhlich syndrome.**  
**Adnexitis, gonorrhoeal, bilirubin in serum in, III, 198.**  
**Adolescence, anaemia in, III, 192.**  
   gynaecology of, III, 523.  
   standard metabolism of, III, 256.  
**Adonis vernalis, biological assay of, pigeons in, III, 482.**  
**Adrenals, atrophy of, compensatory, physiology of, III, 745.**  
   in status thymico-lymphaticus, III, 26.  
   cancer of, with pseudo-hermaphroditism, III, 228.  
   cellular response to insulin in, in pigeons, III, 27.  
   changes in, in relation to oestrous cycles in rats, III, 119.  
   constituents of, II, 367, 368.  
   demedullation of, effect of, on acceleration of denervated heart, III, 49.  
   detoxication and, III, 887.  
   diseases of, III, 381.  
   effect of, on female genital changes in rats, III, 119.  
   on glycogen phosphorylation in muscle, III, 583.  
   on nitrogen storage produced by pituitary preparations, III, 747.  
   on pancreatic diabetes in toads, III, 231.  
   effect on, of ovariectomy, in rats, III, 228.  
   extracts of, assay of, for lactogenic hormone, III, 808.  
   foetal, correlation of, with oedema and late pregnancy toxemia, III, 595.  
   function of, tuberculosis and, III, 808.  
   hormones of, III, 521.  
   effect of, on liver-glycogen metabolism, III, 746.  
   hypertrophy of, due to oestradiol, age factor in, III, 809.  
   in health and disease, rôle of, III, 521.  
   innervation of, III, 112, 745.  
   insufficiency of, postoperative, prevention of, after unilateral adrenalectomy, III, 26.  
   secondary to pituitary pan-hypofunction, renal function in, III, 382.  
   iron of, in guinea-pig and rat, III, 887.  
   lactation factor of. See Cortilactin.

- Adrenals**, lipins of, changes in, in rats, III, 26.  
in fasted guinea-pigs, III, 228.  
in pregnant rabbits, III, 228.  
mitotic activity of, effect of testosterone propionate on, in immature female rats, III, 128.  
preparations of, effect of, on basal metabolism and specific dynamic action, III, 119.  
relation of, to serum-albumin and -globulin levels, III, 889.  
to vitamins, III, 760.  
tumours of, chromaffin cell, III, 120.  
oestrogenic effects of, in ovariectomised mice, III, 249.
- Adrenal cortex**, III, 26, 307.  
activity of, biological assay of, III, 382.  
antagonistic effects of underfeeding on, in guinea-pigs, III, 808.  
cancer of, virilism in, III, 382.  
compounds of, effect of, on ketosis, III, 595.  
in blood, III, 382.  
constituents of, II, 199, 413.  
and their derivatives, II, 264.  
degeneration of, caused by germanin, III, 49.  
effect of, on phosphatase activity, III, 936.  
on resistance to low temperatures, III, 746, 809.  
extracts, effect of, on blood-sugar in traumatised and adrenalectomised rats, III, 382.  
on carbohydrate and potassium metabolism, III, 521.  
on phosphatase of rat femurs, III, 361.  
treatment with, of Addison's disease, III, 745.  
fat of, ago and sex variations in, in rats, III, 745.  
in fasting guinea-pigs and rabbits, III, 595.  
function of, III, 808.  
hormones of, III, 808.  
determination of, in heart muscle, III, 308.  
effect of, on carbohydrate and protein metabolism, III, 808.  
on liver-glycogen, III, 31.  
on renal excretion of electrolytes by rats, III, 888.  
protective action of, against thyroxine, III, 596.  
relation of, to sex and thyroid hormones, III, 305.  
treatment with, and sulphapyrimidine of Addison's disease with meningitis, III, 920.  
See also Deoxycorticosterone.  
hyperplasia of, and intersexuality, familial, III, 892.  
insufficiency of, replacement therapy in, with deoxycorticosterone acetate and sodium chloride, III, 382.  
treatment of, with deoxycorticosterone acetate, III, 888.  
reaction of, to low atmospheric pressure, III, 887.  
relation of, to virilism, III, 307.  
sex hormones and, III, 887.  
"sodium factor" of, therapeutic use of, III, 451.  
sodium-retaining substances of, assay of, III, 382.  
steroids in. See under Steroids.  
transplants of, homoplastic, incidence of, in gonadectomised rats, III, 119.  
tumours of, III, 381.  
weight changes in, in vitamin- $B_1$  deficiency, III, 119.
- Adrenal medulla**, secretion in, cytology of, in cats, III, 285.  
tumours of, III, 381.  
in castrated mice, III, 824.  
weight changes in, in vitamin- $B_1$  deficiency, III, 119.
- Adrenalectomy**, blood chemistry changes associated with circulatory failure in, III, 745.  
body weight and work performance after, in rats treated with 6-hydroxy-11-deoxycorticosterone,  $\Delta^4$ -17(a)-methyl-D-homo-androsten-17(a)-ol-3:17-dione, and progesterone, III, 595.
- Adrenalectomy**, deoxycorticosterone acetate requirement of dogs after, III, 308.  
diuresis after, in rats, III, 888.  
effect in, of potassium-poor and sodium-rich diets, III, 686.  
effect of, on blood in rats, III, 198.  
on carbohydrate metabolism, III, 307.  
on epiphyseal growth, III, 361.  
on gastrocnemius function in rats, III, 229.  
fat absorption after, III, 450, 608.  
glycogen phosphorylation decrease in muscles after, III, 451.  
hair-growth acceleration in rats after, in relation to thyroid, III, 381.  
hair loss as deficiency test in, in rats, III, 120.  
liver glycogen and insulin resistance in, effect of corticosterone and pituitary hormone on, III, 121.  
muscle-protein solubility after, III, 299.  
phosphorylation disturbance after, III, 888.  
protective action of deoxycorticosterone and progesterone in, in mice exposed to low temperature, III, 809.  
survival after, effect of hormones on, in mice, III, 229.  
technique and maintenance in, III, 595.  
treatment with deoxycorticosterone acetate after, III, 307, 308.  
urine concentration and dilution tests in dogs after, III, 899.
- Adrenaline**, adsorbents for solutions of, with procaine, III, 51.  
circulatory response of unanaesthetised dog to, III, 745.  
determination of, in blood in allergy, III, 858.  
dilator effects of, action of histamine on, III, 513.  
effect of, and ephedrine and prostigmine on muscle, III, 804.  
on blood pressure, injected intravenously and into bone-marrow, III, 808.  
on blood-sugar in hypochloræmic conditions, III, 521.  
on bronchoconstriction in blood-perfused lungs, III, 450.  
on fibrillation threshold of mammalian ventricles, III, 769.  
on nicotine toxicity, III, 484.  
on semen production in fowls, III, 685.  
on tissue respiration, III, 229.  
on uterus of guinea-pigs, III, 634.  
formation of, effect of nicotine on, in dogs, III, 411.  
hydrochloride, in solutions with procaine, preparation of, for surgical use, III, 261.  
in gelatin, injection of, III, 307.  
in intraocular fluid formation, III, 22.  
in oil, treatment with, III, 382.  
inactivation of, by uterus and plain muscle, III, 120.  
plasma-prothrombin activity after injection of, III, 9.  
recovery of, injected intravenously and subcutaneously, III, 307.  
sensitisation of denervated heart to, III, 229.  
sensitivity to, action of noxious agents on, III, 121.  
serum-potassium level depression by, III, 120.  
stability of, in solutions of adrenaline and procaine, III, 260, 633.  
synergistic action of, on salivary secretion, III, 481.  
treatment with, *in vitro*, in relation to liver-glycogen, III, 332.
- $\Delta$ -Adrenaline**, "heavy," synthesis of, II, 282.
- Adrenalone**, action of, on blood-sugar of, X-ray on, in rabbits, III, 745.
- Adsorbents**, infra-red reflexion of liquids adsorbed on, I, 196.
- Adsorption**, I, 55.  
activated, optical study of, I, 271.  
at crystal-solution interfaces, I, 94.  
at water-air and water-organic liquid interfaces, I, 54.  
by solutions of paraffin-chain salts, Gibbs equation for, I, 171.  
by synthetic resins, I, 171.
- Adsorption**, from non-aqueous media, glass spheres in, I, 54.  
isotherms of, and law of mass action, I, 360.  
Fowler's, thermodynamic derivation of, I, 202.  
Langmuir's, derivation of, I, 19.  
of coloured ions, demonstration of, I, 282.  
of gases from low to high pressures, I, 360, 395.  
of organic compounds, I, 395.  
relation of, to spreading pressure and wetting, I, 360.  
technique for, I, 337.  
van der Waals', of gases on glass plates, I, 170.
- Aedes aegypti***, control of, III, 170.
- Aërosols**, conversion of, into organosols, I, 203.  
equilibrium in, I, 20.  
germicidal, chemistry and physics of, III, 417.  
of water-solubles, validity of phase-rule for, I, 56.
- Aërosol OT**, bactericidal action of, in relation to  $pH$ , III, 491.
- Ætiocholanic acid**, 3(a)- and 3(β)-hydroxy-, II, 322.
- allo*Ætiocholanic acid**, 3(a)- and 3(β)-hydroxy-, and their benzoyl derivatives, methyl esters, II, 231, 322.
- $\Delta^5$ -Ætiocholanic acid**, 3(β)-hydroxy-, II, 322.
- Ætioporphyrin**, hydroxy-, II, 290.
- Affinity**, I, 210, 275, 329.  
relation of, to velocity of reaction, I, 332, 370.
- Agar-agar**, bismuth-sulphite, modified, III, 644.  
chocolate, for isolation of *Neisseria*, etc., III, 644.  
constitution of, II, 219.  
dielectric constant of fractions of, I, 58.  
moulding compositions of, III, 723.
- Agar cup-plate method**, III, 61.
- Agathenedicarboxylic acid**, oxidation of, with potassium permanganate, II, 370.
- Age**, effect of, on survival, of respiration, spinal reflexes, pupillary responses, and heart action, under oxygen deprivation, III, 375.  
old, ascorbic acid tolerance test applied to, III, 472.  
basal metabolism and insensible perspiration in, III, 408.  
carbohydrate metabolism in, III, 408.  
mineral metabolism changes in, III, 409.  
treatment in, with vitamins-B and -C, III, 470.
- Ageing**, hypoplasia of organs in, III, 462.  
of precipitates, coprecipitation and, I, 325, 362.  
problems of, III, 462.  
process of, hormones and, III, 886.
- Agglutinins**, absence of, in invertebrates, III, 290.  
formation of, in cold-blooded animals, III, 941.  
in antisera to hæmolytic streptococci, III, 349.  
substance inhibiting, in human serum, III, 367.
- isoAgglutinin**, changes in, after transfusion, III, 290.
- Agglutininogen**, *Rh*, from isoimmunisation in pregnancy, transfusion reaction due to, III, 366.
- Agitators**, laboratory, I, 118.
- Aglucoses**, cardiac, lactones related to, II, 28, 29, 405, 415; III, 709.
- Agnosia**, finger, III, 586.
- Agranulocytosis**, due to sulphathiazole, III, 707, 921.  
neutrophil, recurrent, III, 572.  
Schultz, in children, III, 872.  
sulphapyridine, recovery from, after rigor during blood transfusion, III, 707.  
treatment of, with sulphathiazole, III, 797.
- Agriculture**, spectrochemical analysis in, I, 211.
- Air**, alveolar, carbon dioxide concentration in, III, 102.  
composition of, in domestic animals, III, 514.  
analysis of, bacteriologically, III, 345.  
carbon monoxide and particulate matter in, of Holland tunnel and Metropolitan New York, III, 553.  
conditioning of, clothing in relation to, III, 713.  
in mines, III, 55.

- Air, cosmic-ray absorption in, I, 162.  
day-school, radiant disinfection of, II, 556.  
expiration of, sudden, III, 442.  
expired, carbon dioxide concentration in, III, 735.  
determination in, of alcohol, III, 336.  
humidity of, I, 249.  
inspired, obtaining gas samples of, III, 374.  
liquefaction and fractionation of, lecture experiment on, I, 188.  
oil content of, and its effect on lungs, III, 55.  
thermodynamic properties of, I, 262.  
viscosity of, I, 168.  
See also Atmosphere.
- Aircraft, instruments in,  $\gamma$ -rays from, III, 932.  
production of, skin hazards in, III, 55.
- Air-raids, casualties in, blood transfusion for, III, 193.  
injury from, normoblastic crises after, III, 571.  
psychological effects of, III, 217.
- Alanine, equilibrium of, with formaldehyde, II, 348.  
solubility of thallos salts in, I, 141.
- dl*-Alanine, deamination of, in adrenalectomised rats, III, 307.  
heats of ionisation of, I, 299.
- l*-Alanine, preparation of, from protein hydrolysates, II, 189.
- dl*- $\alpha$ -Alanine, density and specific heat of aqueous solutions of, I, 234.
- $\beta$ -Alanine, density and specific heat of aqueous solutions of, I, 234.  
synthesis of, and its salts, II, 217.
- dl*-Alanylglycylglycine, methyl ester, and its hydrochloride, II, 250.
- d*-Alanyl-*d*-leucine, II, 77.
- "Alarm reaction," adrenaline, glucose, and insulin in, III, 121.
- Albers-Schönberg disease. See Osteopoikilosis.
- Albite, in gold veins, I, 347.
- Albite-schists, Antrim, I, 379.
- Albite-sphene, I, 380.
- Albucid, toxicity of, III, 162.  
treatment with, in urology, III, 478.  
of *Escherichia coli* infections, III, 162.  
of trachoma, III, 885.  
of urinary tract infections, III, 706.
- Albucid soluble, treatment with, of pyocyanus corneal ulcers, III, 222.
- Albumin, bovine, as antigen, III, 874.  
determination of, in serum, density measurement in, III, 368.  
egg-, denaturation of, by pressure, III, 639.  
plasma-, bovine, administration of, III, 874.  
in healthy subjects, III, 9, 369.  
serum-, alkali-treated bovine, administration of, to man and lower animals, III, 874.  
as blood substitute in secondary shock, III, 437.  
conjugates of, with carbimides of aromatic polynuclear hydrocarbons, II, 123.  
crystalline, fractionation of, III, 775.  
denatured, X-ray structure of, II, 338.  
denaturation of, III, 416.  
horse, effect of, on shock in dogs, III, 663.  
iodination of, progressive, III, 808.  
level of, relation of adrenals, pituitary, and thyroid to maintenance of, III, 889.  
regeneration of, in dietary hypoproteinæmia, III, 874.  
transfusion of, into man, III, 437.
- Albuminuria, treatment of, by water-balance method in pregnancy, III, 321.
- Alcaligenes faecalis*, action of, on cholic acid, III, 940.
- Alcohol. See Ethyl alcohol.
- Alcohols, acetylenic, catalytic addition to, II, 329.  
adsorption of, at salicylaldehyde-water interfaces, I, 202.  
alicyclic, dielectric polarisation and association of, I, 266.  
aliphatic, catalytic dehydrogenation and condensation of, III, 127.  
secondary, condensation of, with benzene, in presence of aluminium chloride, II, 401.  
allylic, condensation of, with hydroxyquinones, II, 149.
- Alcohols, condensation of, with ketones in presence of mixed catalysts, II, 299.  
dehydration and dehydrogenation of, catalytic, I, 107, 272.  
dehydrogenation of, by rhenium disulphide, I, 208.  
detection of, by means of their phenylurethanes, II, 387.  
with xanthates, II, 343.  
dipole moments of, in dilute benzene solutions, I, 91.  
*di*hydric. See Glycols.  
*poly*hydric, complexes of alkali metals and, I, 40.  
uricosuric effect of, III, 636.  
identification of, in aqueous solution, II, 161.  
light scattering in, I, 316.  
long-chain, *n*-paraffin, energy, compressibility, and phase transformations in monolayers of, I, 295.  
spreading of, on water, I, 95.  
oxidation of, by ketones, II, 16.  
phenolic, reaction of, with unsaturated compounds, II, 374.  
photochemical reactions of, with ketones, II, 363.  
primary, association of, I, 204.  
propagation of supersonic waves in solutions of, I, 201.  
reaction of, with halogens and magnesium, II, 246.  
with iodine and magnesium, II, 246.  
stereoisomeric, number of, II, 294.  
steroid epimeric, acid addition to, II, 365.  
substituted nitrogenous, esters of, hydrolysis of, III, 554.  
surface activity of, in bromobenzene, I, 202.  
viscosity of, in monolayers, I, 325.
- Alcoholism, acute hepatitis of, III, 319.  
anuria, azotæmia, and circulatory collapse during, III, 802.  
chronic, post-repeal study of, III, 447.  
with cortical laminar sclerosis, III, 302.  
mental mechanisms in, III, 885.  
treatment of, with benzedrine sulphate, III, 517.  
with glucose-insulin, III, 549.
- Aldehydes, aliphatic, photolysis of, I, 304.  
 $\alpha\beta$ -unsaturated, preparation of, II, 348.  
aromatic, from plant materials, III, 360.  
condensation of, with amides, II, 16, 197, 313.  
with benzyl carbamate, II, 76.  
with malonic acid, II, 97, 256.  
hindered, bimolecular reduction of, II, 171.  
isomerisation of, to ketones, II, 174.  
in presence of Japanese acid earths, II, 55.  
nitro-diols from, II, 389.  
phenolic, formation of, in hardening of phenolic alcohols, II, 255.  
reaction of, with cyanohydrins, I, 204.  
Schiff's reagent for, II, 279.  
semicarbazones of, II, 169.  
spectra of, Raman, and their mixtures with ketones, I, 315.  
synthesis of, II, 407.  
from Grignard reagents, II, 15.  
unsaturated, spectra of, absorption, I, 351.
- 5-Aldehydobenzoic acid, 3-chlorohydroxy-, and its semicarbazone, II, 358.
- $\alpha$ -Aldehydononylcyclohexanol, semicarbazone, II, 392.
- n*-Aldehyde-octoic acid, peroxide from, II, 187.  
Aldonic acids, configuration of, II, 393.
- Aldoses, reaction of, with  $\alpha$ -amino-acids and peptides, I, 22.  
*anti*- and *syn*-Aldoximes, action on, of potassium amide, and their derivatives, II, 15.
- Alepic acid, ethyl ester, physical constants of, I, 388.
- Aleuritic acid. See Hexadecic acid, *thio-tri*-hydroxy-.
- Algae, brown, green pigment of, III, 950.  
chemistry of, III, 425.  
constituents of, III, 501.  
green, carotenoids in, III, 180, 860.  
gelling of pectic material of, in presence of sulphanilamides, III, 181.  
growth of, effect on, of *p*-aminobenzoic acid and sulphanilamide, III, 949.
- Algae, marine, auxin in, III, 75.  
proliferating factors in, produced by ultra-violet irradiation, III, 416.  
pyrenoids in, III, 73.  
zoöspores of, surface structure of, III, 775.
- Alginate acid, ammonium salt, protective colloid properties of, I, 21.  
properties of, I, 21.
- Alimentary tract, absorption of protein from, III, 692.  
digestion in, in mammals, III, 528.  
disease of, in relation to vitamin-*B*<sub>1</sub> deficiency, III, 457.  
effect on, of diacetylmorphine, morphine, etc., III, 167.  
pharmacology of, III, 923.  
physiology of, III, 393.
- Aliphatic compounds, introduction of sulphogroups into, II, 391.  
monomolecular layers of, I, 265.  
substitution in, II, 213.
- Alizarin-red, stabilisation by, of suspensions, I, 361.
- Alkali alkaline-earth phosphates, replacement of elements in, I, 245.  
chlorides, determination of, acidimetrically, I, 407.  
cyanonickelites, I, 306.  
halides, phase changes in binary mixtures of, I, 141.  
solid solutions of, I, 234.  
thermal energy of, I, 226.  
hydro-selenides and -sulphides, heats of solution of, I, 267.  
iodides, conducting area between Beilby layer and solutions of, I, 206.  
metals, analysis of, qualitative, I, 183.  
polarographically, Ilkovič equation in, I, 300.  
photo-electric alloys of, I, 17.  
reactions of, with hydrogen, I, 67.  
scattering of ions of, in mercury vapour, I, 126.  
spectra of, in presence of foreign gases, I, 29.
- Alkalis, determination of, in coloured effluents, I, 184.  
in urine, acidimetrically, III, 820.  
effect of, on keratin stability, III, 822.
- Alkali reserve, of culture media, variations in, III, 85.
- Alkaline-earth alkali phosphates, replacement of elements in, I, 245.  
arsenates, reactions of, with solutions of salts, I, 336.  
bromides and iodides, activity coefficients of, I, 398.  
metals, alloys of, I, 294.  
oxides, mixed, crystal structure of, I, 259.
- Alkaloids, detection of, II, 432.  
microchemically, II, 68.  
fumariaceous, III, 502.  
papaveraceous, II, 429.  
toxicology of, III, 484.  
See also Aconite, Calumba root, Cinchona, Lycopodium, *Strychnos*, Tobacco, etc.
- Alkalosis, chloride-deficient diet and, in rats, III, 907.  
in peptic ulcer therapy, III, 753.
- Alkanes, *di*bromo-, diastereoisomeric, configuration of, II, 214.
- Alkanesulphonic acids, analysis of, and their salts, II, 162.
- Alkanolamines, II, 283.
- 5-Alkoxybenzthiazoles, 6-nitro-, reactions of, with alcohols, II, 153.
- Alkoxybutadienes, condensation of, with acetaldehyde, II, 261.
- $\gamma$ -Alkoxybutyryl chlorides, action of heat on, II, 2.
- Alkyl carbonates, II, 246.  
*di*fluorides, synthesis of, II, 294.  
halides, dipole moments of, I, 353.  
distortion polarisation of, I, 91.  
high-mol. wt., hydrogen halide elimination of, II, 342.  
reaction of, with phenols, II, 193.  
spectra of, absorption, I, 257.  
*poly*halides, Raman spectra of, I, 41.

- Alkyl iodides, dipole moments of, I, 258.  
exchange reaction of, with iodides, I, 301.  
nitrates, spectra of, infra-red and Raman, I, 288.  
nitrites, II, 215.  
sulphates and sulposuccinates, conductivity of solutions of, I, 362.  
disulphides, preparation of, II, 162.  
Alkylacetylenes, spectra of, Raman, I, 83.  
Alkylamines, volatile, in human metabolism, III, 156.  
Alkylamines, halogeno-, Grignard reaction with, II, 193.  
 $\beta$ -Alkylaminoethanols, synthesis of, from ethanolamine, II, 394.  
Alkylaminoethyl alkoxybenzoates, II, 404.  
Alkylation, alkyl carbonates as solvents in, II, 246.  
Alkylbenzenes, identification of, with chlorosulphonic acid, II, 136.  
*p*-Alkylbenzoic acids, preparation of, II, 257.  
Alkylglucosides, rotational relations of, II, 351.  
Alkyl- $\beta$ -D-glucosides, enzymic hydrolysis of, II, 218.  
3-Alkyl- $\Delta^1$ -cyclohexenes, synthesis of, II, 252.  
Alkylidenecyanoacetic acids, esters, II, 133.  
Alkylidenemalononic acids, esters, II, 133.  
Alkylcyclopentanones, II, 259.  
Alkylphenyl ethers,  $\gamma$ -chloro-, II, 357.  
16-Alkylpregnenolones, II, 322.  
16-Alkylprogesterones, II, 322.  
5-Alkyl-2-pyrones, synthesis of, II, 28.  
Alkylresorcinols, II, 308.  
Alkylsuccinic acids, II, 278.  
4-Alkylthiazoles, 2-amino-, preparation of, from substituted 2-amino-4-thiazylacetates, II, 153.  
Alkylthiocarbamides, chlorination of, explosion hazard in, II, 128.  
Allantoin, determination of, III, 503.  
Allene, *aa*-dichloro-, II, 71.  
Allergens, air-borne, incidence of, III, 498.  
chemistry of, III, 356.  
house dust, III, 721.  
in pollen, III, 784.  
Allergic diseases. See under Diseases.  
Allergic shock. See under Shock.  
Allergy, III, 651.  
abdominal reactions in, III, 71.  
alimentary, familial incidence of, III, 946.  
blood-histamine in, and its treatment with histaminase, III, 70.  
cold, III, 561.  
electrophoresis of skin in, III, 721.  
endogenous, III, 721.  
flour, in bakers and millers, III, 71.  
food, familial, tachycardia in, III, 356.  
geographic and seasonal effects on, III, 499.  
purpura associated with, III, 356.  
gastro-intestinal, III, 356.  
histamine release in, III, 784.  
in children, progress of treatment of, III, 70.  
milk, III, 499.  
gastro-intestinal, III, 651.  
nasal, treatment of, III, 561.  
of abdominal organs, III, 356. ✓  
cyclopropane, III, 548.  
protein derivatives in, III, 358.  
respiratory, skin reactions to fungi in, III, 71.  
response of children in, to toxoid, III, 721.  
serum, in atopic persons, III, 355.  
skin, histamine release in, III, 651.  
to chemical compounds, III, 946.  
to mammalian sera, III, 355.  
skin tests in, III, 71.  
treatment of, with pollen extract pills, III, 721.  
types of, III, 355.  
*Alligator mississippiensis*, brain of, arteries and vascular bed of, III, 513.  
*Allium sativum*, chemistry of, III, 278.  
Alloxan, use of, as substitute for ninhydrin in analysis, II, 68.  
Alloxazine-adenine dinucleotide, action of X-rays on, III, 554.  
Alloys, analysis of, photographing spectra for, I, 155.  
spectrally, tempering effect in, I, 156.  
catalytic action of, I, 403.  
crystal structure of, I, 320.
- Alloys, equilibria of, at low temperatures, I, 393.  
for instruments, I, 75.  
irreversible transformations in, I, 358.  
phases in, X-ray study of, I, 17.  
photo-electric, of alkali metals, I, 17.  
ternary, crystal structure of, I, 169.  
theory of relaxation of, I, 52.  
*d*-Allulose. See *d*-Psicose.  
Allyl derivatives, Raman spectra of, I, 83.  
Allylacetone, reaction of, with ammonium cyanide, II, 249.  
Allylbutylmalonic acids, diethyl esters, II, 247.  
Allylcellulose, preparation of, II, 191.  
Allylic chlorides, diolefines and olefines from, II, 126.  
Allylic rearrangements, II, 293.  
*N*-Allylmorphine, and its hydrobromide, II, 336.  
*p*-Allyloxyacetophenone, and its oxime, II, 373.  
 $\beta$ -Allyloxypropyl alcohol,  $\gamma$ -chloro-, II, 72.  
2-Allylphenol, 5-amino-, and its 5-acetyl derivative, II, 281.  
6-chloro-, and its  $\alpha$ -naphthylmethane, II, 283.  
4-Allylphenol, 2,6-dichloro-, II, 283.  
Almond oil, treatment with, and procaine hydrochloride, of sciatica, III, 516.  
Aloe, effect of, on bile flow in dogs, III, 482.  
*Aloe vera*, leaves, healing with, of X-ray burns, III, 263.  
phytochemistry of, III, 278.  
Aloin, formaldehyde and furfuraldehyde from, II, 387.  
Alopecia, after oestradiol tablet implantation in guinea-pigs, III, 890.  
anti-factor for, in mice, III, 155.  
from cyverine hydrochloride, III, 926.  
See also Baldness.  
*Alternaria*, specificity of, in asthma and hay fever, III, 71.  
Altitudes, high, radiation phenomena at, I, 312.  
survival of rats at, III, 375.  
Altrosan acetates, II, 80.  
 $\beta$ -D-Altrose, 2,3:4:6-tetraacetate, II, 80.  
Alums, dielectric constants of, I, 289.  
linear thermal expansion coefficients of, I, 390.  
Aluminium, atomic lattice of, stress-strain curve for, I, 320.  
crystals, elastic constants of, I, 45.  
etched figures on, I, 356.  
structure of, I, 86.  
extraction of, electrolytically, demonstration of, I, 215.  
films, on glass, I, 230.  
magnetic susceptibility of, effect on, of iron and silicon, I, 235.  
nuclear photo-effect on, I, 128.  
solubility in, of silicon, I, 394.  
solubility of, in mercury, I, 235.  
thermal expansion of, I, 50, 392.  
Aluminium alloys, with antimony, bismuth, and lead, I, 394.  
with chromium, I, 394.  
with cobalt, I, 395.  
with cobalt and iron, I, 18.  
with cobalt and nickel, I, 395.  
with copper, eutectoid, transformation in, I, 17.  
with iron and magnesium, I, 18.  
with iron and nickel,  $\alpha'$  phase in, I, 169.  
with iron and nickel and with nickel and silicon, I, 323.  
with lead and silver, I, 235.  
with magnesium, I, 53.  
with magnesium and silicon, I, 18, 53.  
with mercury, as catalyst in Friedel-Crafts reaction, II, 136.  
with silver, structure of, during hardening, I, 394.  
Aluminium compounds, effect of, on tumour growth and radiosensitivity, III, 325.  
Aluminium salts, mixed precipitates from solutions of calcium salts and, I, 274.  
Aluminium bromide, liquid, spectrum of, Raman, I, 314.  
chloride, action of, on aromatic hydrocarbons, II, 136.  
compound of, with sulphur dioxide, I, 314.
- Aluminium chloride, precipitation of, from ether-aqueous hydrochloric acid, I, 307.  
chlorides, basic, I, 335.  
chromate, I, 246.  
halides, fused, electrochemistry of baths of, I, 268.  
hydroxide, autoclave treatment of, I, 237.  
colloidal, suspensions of, I, 325.  
gel, treatment with, of peptic ulcer, by naso-gastric drip, III, 527.  
sols, I, 237.  
thixotropy of laminar films of, I, 20.  
lithium sulphate, hydrate, I, 180.  
magnesium hydroxide, I, 274.  
oxide, equilibrium of, with calcium, iron, and silicon oxides, I, 330.  
with ferrous oxide and silica, I, 329.  
films, crystal structure of, I, 291.  
for electron microscopy, I, 250.  
ionic adsorption in solutions of, I, 205.  
low-temperature adsorption by, of nitrogen, I, 55.  
oxychloride, hydrosols, effect of potassium salts on, I, 203.  
periodate, I, 246.  
phosphate-sulphate, Utah, I, 380.  
sodium silicates, equilibrium of, with calcium silicate, I, 330.  
sulphate, hydration of, I, 145.  
sulphates, basic, I, 237.  
Alumino-silicic acid, I, 70.  
Aluminium organic compounds:—  
Aluminium acetate N.F. solution. See Acetic acid, aluminium salt.  
dimethyl bromide and chloride and trimethyl, molecular structures of dimers of, I, 134.  
trimethyl, derivatives, polymerisation of, II, 240.  
Aluminium determination:—  
determination of, by fluorescence method, I, 114.  
Alzheimer's disease, III, 587.  
with predominating crossed cerebocerebellar hemiatrophy, III, 741.  
with spastic paralysis, III, 217.  
Amblyopia, III, 677.  
tryptasamide, treatment of, with thiamin hydrochloride, III, 23.  
*Amblystoma*, abnormalities in, production of, III, 791.  
developing, choline-esterase in, III, 489.  
development of, steady state potential differences in, III, 506.  
ear primordium of, polarisation reversal in, III, 81.  
embryo, collapse of archenteron in, III, 727.  
embryonic limb of, reduplication of, III, 4.  
forelimb girdle in, polarity of, III, 81.  
larva, fore-limb regeneration in, effect of neutrons and X-rays on, III, 933.  
thalamus of, melanin formation in, III, 377.  
ovary and testis inhibition in, by homotypic gonad, III, 752.  
*Amblystoma maculatum*, eggs, green algae in, III, 947.  
*Amblystoma punctatum*, gastrular ectoderm of, neural differentiation of, without organiser, III, 726.  
*Amblystoma tigrinum*, larvae, dietary production of cataracts in, III, 827.  
Ambrettolide, and its isomerides, II, 392.  
 $\Delta^4$ -isoAmbrettolide, II, 393.  
*epi*Ambrettollic acid. See  $\Delta^6$ -Hexadecenoic acid, *o*-hydroxy-.  
*Ameiurus*, eyes and optic paths of, III, 682.  
Amenorrhoea, in hypopituitarism, treatment of, III, 690.  
placental blood in, III, 314.  
urinary excretion of 17-ketosteroids in, III, 603.  
American Radium Society, report of, III, 933.  
Amethocaine, hydrochloride, toxicity of, III, 633.  
Amfetin, preoperative use of, in peritonitis, III, 388.  
*Amia calva*, embryos of, nervous system in, III, 3.  
Amidase, III, 555.



- Amides, acid, as hypnotics, II, 150.  
condensation of, with aldehydes, II, 16, 197, 313.  
with carbonyl compounds, II, 76.  
hydrolysis of, in concentrated hydrochloric acid, I, 301.  
hypnotic, II, 77.  
spectra of, Raman, I, 165.
- Amidines, II, 63.
- 4-Amidino-2'-cyanodiphenyl, II, 173.
- 4-Amidinodiphenyl ether, II, 173.
- p*-Amidinomethylbenzamidine, dihydrochloride, II, 173.
- m*- and *p*-Amidinophenyl *p*-aminobenzyl ethers, dihydrochlorides, II, 173.
- p*-Amidinophenyl  $\beta$ -*p*-aminophenylethyl ether, dihydrochloride, II, 173.
- 4'-Amidinostilbene, 4-amino-, and 4-nitro-, dihydrochlorides, II, 173.
- Amidopyrine. See Pyramidone.
- Amination, deamination, and transamination, III, 766.
- Amines, aliphatic, II, 188, 484.  
densities of, I, 139.  
high mol. wt., and their salts, I, 58, 97, 147, 236, 299, 398.  
aromatic, alkylation of, II, 87.  
restricted rotation in, II, 138, 306.  
colour reactions of, and of their derivatives, with selenious acid-sulphuric acid solutions, II, 221.  
detection of, in kidney extracts, III, 820.  
determination of, alkalimetrically, II, 212.  
diazotisation and nitrosation of, II, 217.  
growth-inhibiting action of, resistance of tumour cells to, III, 151.  
heterocyclic, condensation of, with dicarboxylic acid anhydrides, II, 31.  
optically-active vasopressor, II, 305.  
oxidation of, by bacteria, III, 644.  
polymeric, and their salts, I, 363.  
pressor. See under Pressor substances.  
reaction of, with nitrous acid, II, 359.  
secondary, preparation of, II, 164.  
sympathomimetic, action of, on humoral transmission of sympathetic nerve actions, III, 922.  
on pancreatic secretion in dogs, III, 746.  
cardiac effects of, III, 924.  
colour reactions of, with diazonium compounds, II, 305.  
fate of, in the body, III, 630.  
synthesis of, from amides, II, 288.
- Amino-acids, I, 204; III, 733.  
acetylation of, III, 835.  
action of, on growth, III, 905.  
on phosphate transfer in muscle extract, III, 915.  
administration of, III, 618.  
degradation of, III, 542.  
determination in, of carboxyl groups, II, 184.  
determination of, by ninhydrin reaction, II, 184.  
in proteins, I, 160.  
dicarboxylic, chromatography of, on alumina, II, 301.  
dynamic action of, in infants, III, 835.  
equilibrium of, with formaldehyde, I, 204.  
gastric inhibition caused by, in small intestine, III, 753.  
in serum-proteins, in normal and rheumatoid arthritis subjects, III, 9.  
man and, III, 760.  
metabolism of. See under Metabolism.  
*N*-methanesulphonyl derivatives of, II, 5.  
parenteral, effect of, on growth of rats, III, 618.  
physiology of, III, 542.  
quantitative investigations of, I, 68; II, 165, 377.  
reactions of, investigated by non-aqueous titration, II, 339.  
separation of, by exchange adsorption, II, 432.  
chromatographically, II, 249.  
from amino-sugars and sugars, II, 350.  
from diketopiperazines by ionophoresis, II, 329.  
serum-protein regeneration after use of, in nephritis, III, 9.
- Amino-acids, spectra of, absorption, ultra-violet, I, 81.  
sulphonic acids as reagents for, II, 189.  
sulphur-containing, determination of, in globulin, III, 92.  
enzymic oxidation of, III, 623.  
in metabolism, III, 915.  
treatment with, of liver cirrhosis, parenterally administered, III, 897.
- $\alpha$ -Amino-acids, degradation of, by *d*-amino-acid oxidase, II, 394.  
determination of, III, 503.  
dipeptides of, II, 77.  
emulsifying power of, I, 295.  
esters, internally complex salts of, II, 313.  
metabolic effect of, added to muscle extracts, III, 474.  
reaction of, with aldoses, I, 22.
- Amino-alcohols, II, 306.
- Amino-compounds, biology of, III, 42.  
excitatory, effect of, in neurology and psychiatry, III, 883.
- Amino-ketones,  $\alpha\beta$ -unsaturated, II, 149.
- Aminophyllin, rectal ether and, in treatment of asthma, III, 484.  
treatment with, of hypertensive diabetics, III, 551.  
of post-anæsthetic coma, III, 924.
- Aminosulphonic acids, metal salts, magnetochemistry of, I, 304.
- Ammines, metallic, complex, I, 209.
- Ammodendrine, methylated, picrate of, II, 384.
- Ammonia, absorption of, by water, demonstration of, I, 215.  
combustion and synthesis of, lecture experiment on, I, 343.  
decomposition of, catalytic, over iron catalysts, I, 177, 302.  
radiochemical, in electric fields, I, 404.  
determination of, conductometrically, I, 182.  
distillation of, apparatus for, in blood-urea determination, III, 732.  
dry, preparation of, I, 274.  
equilibrium constant of, effect of pressure on, I, 266.  
formation of, by bacteria, III, 782.  
by electric discharge in wood gas, I, 371.  
by root nodules of Leguminosæ, III, 786.  
from proteins, II, 241.  
fumigation with, for coccidial disinfection, III, 414.  
in blood of nephrectomised and nephritic dogs, III, 875.  
liquid, ammonolysis by, effect of electrolytes of, I, 243.  
electro-capillary curves in, I, 94.  
heats of solution and reaction in, I, 63.  
solubilities of hydrogen and nitrogen in, I, 54.  
molecular beams of, I, 10.  
deviation of, by electric fields, I, 229.  
oxidation of, by air, I, 333.  
catalytically, I, 333.  
colloidal titania as photosensitiser for, I, 178.  
mixed with formaldehyde, II, 302.  
to nitrous oxide in presence of oxides, I, 244.  
spectrum of, absorption, ultra-violet, in aqueous solutions, I, 288.  
band, I, 131.  
structure of, I, 290.  
synthesis of, I, 271.  
on iron catalysts, I, 207.
- Ammoniates, of complex salts, I, 209.
- Ammonium bases, quaternary, decomposition of, II, 131.
- Ammonium ions, activities of, I, 204.
- Ammonium salts, quaternary, germicidal activity of, II, 203; III, 481.
- Ammonium bromide, hysteresis in volume-temperature curve of, I, 321.
- chloride, aerosols of, I, 20.  
sublimation of, I, 215.  
treatment with, of premenstrual distress, III, 234.  
fluoride hexafluosilicate, I, 230.  
halides, spectra of, infra-red, I, 288.  
nitrate, double salts of, with the sulphate and water, I, 62.
- Ammonium phosphomolybdate, formation of, in presence of organic acids, I, 111.
- Ammonium organic compounds, quaternary, and their decomposition products, II, 221.
- Ammon's horn. See Hippocampus.
- Amnion, smooth muscle of, III, 209.
- Amnioplastin, treatment with, of adherent digital flexor tendons, III, 695.
- Amniotic fluid, human, sugar in, III, 237.  
in lungs of still-born and new-born infants, III, 15.
- Amniotic fluid concentrate. See Amfetin.
- Amœba proteus*, fat digestion by, III, 60.  
 $p_H$  in relation to gel-sol ratio and volume in, III, 643.  
mitosis in, effect of sulphur-containing compounds on, III, 698.
- Amorphous bodies, relaxation effects in, I, 266.
- Amorphous solids. See under Solids.
- Amorphous state, I, 12.
- Amphetamine. See Benzedrine.
- Amphibia, fin development in, III, 567.  
growth and metamorphosis of, action of cytotoxic serum on, III, 192.  
twinning in, III, 790.
- Amphiuma*, ovulation in, induced by pituitary, II, 599.
- Amplifier for biological potentials, III, 502.
- Amusia, pathology of, III, 214.
- isoAmyl alcohol, dehydrogenation of, with rhodium catalyst, I, 208.  
equilibrium of, with water, I, 329.  
spreading pressure of, I, 236.
- isoAmyl nitrate, II, 215.
- tert.-Amyl fluoride, I, 353.
- $\beta$ -Amylaminoisobutyl alcohols, and their *p*-nitrobenzoates, II, 283.
- $\beta$ -*n*-Amylaminoethyl alcohol, and its picrate, II, 394.
- $\beta$ -sec.-Amylaminoethyl alcohol, and its picrate, II, 394.
- 4-Amylaminoethylphosphinic acids, 3-amino-, and 3-nitro-, II, 122.
- n*-Amyl  $\beta$ -*n*-amylisopropenyl ketone, II, 346.
- Amylase, duodenal, starch-liquefying activity of, optimal reaction for, in infants, III, 895.  
pancreatic, action of, III, 489.  
purification of, from kaseru, III, 777.
- $\beta$ -Amylase, polysaccharide with, in wheat flour, II, 81.
- p*-Amylbenzenesulphonamides, II, 136.
- p*-*n*-Amylbenzoic acid, II, 258.
- Amylisborneol, II, 266.
- Amylcaine hydrochloride, dimorphism of, II, 283.
- Amylene, adsorption of ethylene and, on activated charcoal, I, 170.
- n*-Amyl-*d*-glucoside, and its tetra-acetate, II, 218.
- $\beta$ -*n*-Amylglucoside, II, 351.
- $\lambda$ -*n*- and - $\gamma$ -Amylhenicosanes, II, 125.
- $\alpha$ -*n*-Amyl-*n*-heptoic acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- 5'-Amylhexahydrocannabinol, II, 236.
- n*-Amylhexylamine, and its hydrochloride, II, 288.
- 4-*n*-Amylhydantoin, II, 271.
- 2-isoAmyl-3-methyl- $\Delta^2$ -cyclopentenone, and its semicarbazone, II, 363.
- 2-Amyl-1-naphthols, II, 139.
- $\beta$ -*n*-Amyl- $\Delta^4$ -*n*-octenoic acid,  $\alpha$ -cyano-, ethyl ester, II, 133.
- Amyloidosis, Congo-red test for, III, 574, 663.  
development, localisation, and reabsorption of, in rabbits, III, 44.  
hepatic function in, III, 31.  
of skin, localised, III, 333.
- Amylolyse, II, 47.
- Amylopectin, II, 219.  
constitution of, II, 6.
- Amylose, II, 219.  
degradation of, by amylase, II, 190.
- p*-*n*-Amyloxybenzoic acid,  $\beta$ -*n*-butylaminoethyl ester, hydrochloride, II, 404.
- 2- $\gamma$ -isoAmyloxy-*n*-butyl-3-methyl- $\Delta^2$ -cyclopentenone, and its semicarbazone, II, 363.
- isoAmyloxydecane- $\beta$ -dione, II, 300.

- 2-isoAmyloxy-5:4'-diacetyldiphenyl ether, and its semicarbazone, II, 362.  
*o*-isoAmyloxydiphenyl ether, II, 362.  
 $\beta$ -isoAmyloxypropionic acid, electrolysis of, with nitrates, II, 216.  
*p*-*n*-Amylphenyl methyl ketone, and its derivatives, II, 258.  
 isoAmylphloroglucinolaldehyde, II, 260.  
*tert*-Amylisophthalic acids, II, 398.  
 5-*n*- and -iso-Amylpinacolonylbarbituric acids, II, 32.  
 5'-Amyl-3':4':5':6'-tetrahydrocannabinol, II, 236.  
 4-*n*-Amylthiazole, 2-amino-, and its 2-*p*-acetylbenzenesulphonamide, II, 153.  
 5-Amylthiazole, 2-amino-, II, 208.  
 4-Amyl-*m*-xylenes, preparation and reactions of, II, 167.  
 $\beta$ -Amyradienedionolic acid methyl ester, II, 372.  
 acetate, II, 371.  
 $\beta$ -Amyran, II, 372.  
 $\beta$ -Amyranol, and its acetate, II, 372.  
*enol*- $\beta$ -Amyranoldione, and its acetates, II, 373.  
 $\beta$ -Amyranolone, conversion of, into  $\beta$ -amyran and *enol*- $\beta$ -amyranoldione, II, 372.  
 hydrazone, II, 372.  
*enol*- $\beta$ -Amyranolone diacetate, II, 373.  
 $\beta$ -Amyranone, and its semicarbazone, II, 372.  
 Amyrins, and their derivatives, II, 372.  
 $\alpha$ - and  $\beta$ -Amyrins, and their derivatives, II, 201.  
 $\beta$ -Amyrin, acetate, oxidation of, II, 267.  
 introduction of carbonyl groups and double linkings into, II, 372.  
 $\delta$ -Amyrin oxide, II, 267.  
 $\beta$ -Amyrin group, acids of, structure of, II, 418.  
 Amytal, *p*-bromo- and *p*-chloro-benzyl derivatives, II, 204.  
 sodium salt, effect of, on acetylcholine liberation from intestine after nerve stimulation, III, 708.  
 on emptying time of stomach, III, 166.  
 on intelligence tests in man, III, 884.  
 Anæmia, acetylphenylhydrazine, bile-pigment elimination and hæmoglobin reconstruction in bile fistula dogs with, III, 795.  
 among adolescents, III, 192.  
 anti-principle of, transmission of, across placenta, III, 288.  
 aplastic, III, 713.  
 idiopathic, treatment of, with blood transfusion, III, 88.  
 auto-hæmolytic, with auto-agglutination, effect of splenectomy on, III, 435.  
 bone marrow in, III, 794.  
 Cooley's erythroblastic, blood and bone marrow in, effect of hormone and vitamin-B<sub>12</sub> on, III, 571.  
 Mediterranean, in adults, III, 872.  
 in a youth, III, 571.  
 due to pyridoxine deficiency in dogs, III, 329.  
 erythroblastic, after splenectomy in hæmolytic anæmia, III, 795.  
 hæmolytic, after phenothiazine dosage, III, 772.  
 due to sulphathiazole, III, 707, 921.  
 due to sulphonamides, III, 162.  
 symptomatic, III, 508.  
 treatment of, with splenectomy, erythroblastosis after, III, 795.  
 hyperchromic, in infants, III, 366.  
 hypochromic, after gastrectomy, III, 894.  
 primary, terminating in pernicious anæmia, III, 288.  
 hypoplastic, congenital, III, 192.  
 in infectious mononucleosis, III, 872.  
 in nephritis, III, 509.  
 in poor in Glasgow, III, 289.  
 in pregnancy, III, 288.  
 "Innenkörper" reactions in, with sulphanilamide derivatives, III, 628.  
 macrocytic, after gastro-enterostomy, III, 366.  
 in pregnant women on Gold Coast, III, 366.  
 inherited, in mice, III, 431.  
 nutritional, and its prevention, III, 827.  
 in infancy, III, 192.  
 in rats, III, 38.  
 production of, in rats, III, 871.  
 radioactive copper in study of, III, 327.  
 of flexed-tailed mice, III, 366.
- Anæmia, of lead poisoning, porphyrinuria in, III, 367.  
 pernicious, III, 871.  
 action sphere of hæmopoietic factor in, III, 871.  
 anti-concentrates of liver for, assay of, by bone marrow, III, 632.  
 anti-factor for, deficiency of, in dogs, III, 435.  
 effect of, on blood picture of opossum pouch-young and rat embryos, III, 795.  
 from liver, purification of, III, 288.  
 blood-group specific substances in gastric juice in, III, 794.  
 during liver cirrhosis, III, 871.  
 gastric differences and similarities between, and sprue, III, 894.  
 genesis of, III, 620.  
 heredity in, III, 87.  
 hypoprothrombinæmia in, III, 511.  
 neural disturbances in, treatment of, with thiamin, III, 87.  
 neurologic changes complicating, treatment of, III, 19, 191.  
 pantothenic acid absorption in, III, 662.  
 relation of, to solar radiation, III, 845.  
 reticulocytosis in, III, 366.  
 riboflavin absorption in, III, 909.  
 treatment of, capillary and venous blood counts and hæmoglobin determination during, III, 662.  
 quantitative, III, 366.  
 with amidopyrine, III, 191.  
 with ferrum reductum, III, 871.  
 with liver extract, III, 11.  
 pyridin, III, 366.  
 red cell suspensions in, III, 368.  
 sickle-cell, III, 10, 440.  
 "span" in, III, 871.  
 splenic. See Banti's syndrome.  
 tapeworm, III, 509.  
 target cells in, III, 288.  
 value of iron in iron-copper-nucleoprotein complex from fish muscle in, III, 871.  
 vitamin-C in relation to, III, 621.
- Anæsthesia, adrenaline-procaine, gangrene of end-organs after, III, 633.  
 anoxia in, III, 101.  
 apparatus for, transportable, III, 924.  
 avertin, yellow atrophy after sulphanilamide therapy and, III, 546.  
 barbiturate, effects of, on respiration, III, 803.  
 brain volume changes during, III, 372.  
 chlorotone and nembutal, temperature characteristics for respiration of newts under, III, 914.  
 convulsions of. See under Convulsions.  
 dental, and oxygen lack, III, 549.  
 dunacaine, during labour, III, 138.  
 ether, circulatory responses to, of normal and sympathectomised dogs, III, 513.  
 effect of, on blood electrolytes, III, 260.  
 ether and nitrous oxide, plasma-amino-acid-nitrogen changes after, III, 924.  
 evipal, in thoracic surgery, III, 166.  
 for thoracoplasty, III, 549.  
 hysterical, blood pressure reflexes in, III, 372.  
 in obstetrics, III, 412.  
 inflammability of ethyl ether-oxygen-helium mixtures in, I, 102.  
 intravenous, III, 336.  
 apparatus for, III, 863.  
 lethal, blood level of magnesium ion in relation to, III, 711.  
 liver toxicity in, III, 632.  
 percaïne, spinal, III, 770.  
 cyclopropane, III, 412.  
 rebreathing in, III, 924.  
 respiratory derangement during, III, 924.  
 sacral, in obstetrics, III, 412.  
 spinal, blood-pressure fall in, III, 166.  
 continuous, III, 548.  
 in thyroid crisis, III, 886.  
 steroid hormone, III, 166, 233.  
 effect of cardiazol on, III, 770.  
 sympathetic nerve, during labour, III, 138.
- Anæsthetics, barbituric acid derivatives, III, 924.  
 5:5-dialkylloxazolidine-2:4-diones, III, 51.  
 effect of, delay in onset of, III, 632.  
 on blood-keto-acid level, III, 482.  
 on body fluid volume in dogs, III, 769.  
 on liver, III, 31.  
 explosions of mixtures of, prevention of, by helium, III, 632.  
 fluorencarboxylic acid, III, 841.  
 inhalation, cardiac effects of, III, 924.  
 local, II, 404; III, 51.  
 alkyl dialkylaminoalkyl aminophthalates as, II, 14.  
 from *p*-aminobenzoic acid, anti-sulphapyridine and -sulphathiazole effect of, III, 48.  
 potency of, determined by nerve action potential observation, III, 841.  
 pyridinecarboxylic esters, II, 422.  
 synthesis of, II, 63.  
 synthetic, chemistry and pharmacology of, III, 842.  
 $\alpha$ - and  $\beta$ -naphthol derivatives, III, 165.  
 nerve-modulus for, III, 710.  
 oil-soluble, in anal fissure treatment, III, 549.  
 overdose of, resuscitation after, III, 841.  
 pentothal sodium, in orthopedics, III, 549.  
 phenylurethane, optically-active, II, 301.  
 potency of, in relation to physical properties, III, 482.  
 cyclopropyl vinyl ether, III, 770.  
 spinal, toxicity of, animal standards for, III, 841.  
 trichloroethylene, III, 51.  
 Analcite, sedimentary, I, 252.  
 Analgesia, in obstetrics, III, 412.  
 regional, therapeutic, III, 549.  
 Analgesics, cobra venom, in surgery, III, 51.  
 Analysis, adsorption, I, 211, 337; II, 44.  
 amperometric titration, I, 339.  
 black-enamelled basins for light precipitates in, I, 308.  
 bromometric, II, 360, 400.  
 of organic compounds, use of dyes as indicators in, III, 388.  
 titration, fluorescein as indicator in, I, 375.  
 chromatographic, adsorption, I, 276, 374.  
 micro-, I, 112.  
 organic, I, 375.  
 colorimetric, I, 26, 247.  
 nomenclature of optical processes in, I, 187.  
 conductometric titration, in non-aqueous solution, II, 339.  
 electrochemical, rapid methods in, I, 338.  
 electrometric titration, glass electrode in, I, 186.  
 rotating micro-electrodes of platinum wire for, I, 75.  
 with chromous salts, I, 376.  
 hydroxybenzylidenerhodanines in, I, 278.  
 indirect, I, 276.  
 infra-red rays in, I, 185.  
 inorganic, organic reagents in, I, 211.  
 instruments for, I, 187.  
 interference in drop reactions in, I, 276.  
 microchemical, organic, II, 243.  
 detecting foreign material on glass weighing vessels in, I, 282.  
 spark discharge for, I, 27.  
 micro-diffusion, III, 952.  
 with bisulphite reaction, III, 76, 564.  
 organic, physical methods of, II, 339.  
 qualitative, cobaltous sulphate as reagent in, II, 243.  
 micro-technique for, II, 212.  
 reagents for, II, 432.  
 oxanilic acid thioamide in, I, 184.  
 oxidimetric, ruthenium dipyriddy as indicator in, I, 183.  
 titration, ceric sulphate in, I, 27.  
 photochemical, I, 410.  
 photometric titration, apparatus for, I, 187.  
 polarographic, I, 113, 114, 153, 181, 211, 279.  
 elimination of water wave in, I, 276.  
 quantitative, I, 276.  
 potentiometric, multiple electrodes for, I, 28.  
 titration, I, 338.



- Analysis**, potentiometric titration, equivalence and inflexion volumes in, I, 267.  
 qualitative, chart for, I, 215.  
 colour nomenclature in, I, 374.  
 flame tests in, using paper instead of platinum wire, I, 214.  
 of cations, I, 307.  
 of metallic ions, reagents for, I, 376, 410.  
 phosphate separation in, I, 248.  
 reagents for, I, 307.  
 spectrochemical, in agriculture and geochemistry, I, 211.  
 quantitative drop, II, 243.  
 quinoline-8-carboxylic acid in, I, 184.  
 X-ray diffraction, instruments for, I, 341.  
 reagents in, organic, I, 73.  
 specifications for, I, 71.  
 sedimentation, I, 338.  
 spectrochemical, by stepped sector method, I, 181.  
   calculating board for, I, 249.  
   control of arc in, I, 117.  
   graphite electrodes for, I, 75.  
   photometry in, I, 117.  
   projection comparator for, I, 156.  
   quantitative, I, 111, 179.  
 spectro-docimastic, I, 377.  
 spectrographic, arc for, I, 411.  
   formule for photographic plates used in, I, 249.  
   instruments for, I, 341.  
   Lundegardh flame method of, I, 27.  
   apparatus for, I, 116.  
   photography in, I, 156.  
   processing photographic plates for, I, 185.  
   quantitative, I, 411.  
 spectroscopic, I, 247; III, 786.  
   electrodeless annular discharge for, I, 182.  
   nomenclature of methods for, I, 153.  
   quantitative, I, 409.  
   with composite electrodes, I, 74.  
   with flame and spark spectra, I, 154.  
 Raman, I, 247.  
   temperature of arcs for, I, 192.  
 spot-testing in, infra-red rays for, I, 280.  
 statistical, application of, with reference to vitamins, III, 253.  
 thermal, I, 410.  
   with hot-stage microscopes, I, 263, 322, 398.  
 vanadous sulphate as reducing agent in, I, 279.  
 volumetric, acid-base indicators for, sodium quinizarin-6-sulphonate as, I, 276.  
   apparatus for, glass, testing of, I, 343.  
   iodate-iodine monochloride, indicators for, I, 182.  
   turbidimetric, I, 71.  
   wet, disposal of acid fumes in, I, 159.  
*Ananas comosus*, flowering of, controlled by phytohormones, III, 721.  
**Anaphylactic shock**, effect of, on blood-potassium and concentration, III, 199.  
   on liver-histamine, III, 50.  
   effect on, of thyroid hormone, in guinea-pigs, III, 228.  
   protection against, by histaminase, III, 482.  
   resistance to, of white rats, III, 946.  
   serum changes in, III, 179.  
   treatment of, with histamine, III, 721.  
   with haemoconcentration, III, 946.  
**Anaphylaxis**, acetylcholine and, III, 179.  
   antitryptic power of blood in, III, 498.  
   experimental, neuropathologic changes associated with, in monkeys, III, 219.  
   in chick embryo, III, 355.  
   of unsensitised animals with chemicals, III, 498.  
**Anastomosis**, arteriovenous, congenital, III, 373.  
**Anatomy**, III, 6.  
**Andalusite**, giant, in pegmatites, Riverside Co., California, I, 346.  
**Androgens**, activity of, in urine of castrates and eunuchoids, III, 690.  
   comb growth in chicks after injection of, III, 455.  
   determination of, in urine, colorimetrically, III, 240.  
**Androgens**, effect of, on pregnanediol excretion in cyclical women, III, 390.  
   on rats, III, 128.  
   on spermatogenesis in hypophysectomised guinea-pigs, III, 27.  
   esterified, effect of, on sex eminence of chicks, III, 752.  
   percutaneous potency of, effect of ointments on, III, 390.  
   presence of, in placenta, III, 390.  
   production of, during pregnancy and lactation in rats, III, 893.  
   response to, of immature male rat, III, 128.  
   of testicles, after hypophysectomy, III, 893.  
   treatment with, and oestrogen, of melancholia, III, 216.  
   in gynaecology, III, 690.  
   of melancholia, III, 884.  
   of women, III, 128.  
   postnatal, in female rat, effect of, III, 752.  
   response of testis to, III, 815.  
   urinary, effect of gonadotropins on, in man, III, 604.  
   excretion of, after testosterone administration, III, 315.  
   See also Testosterone propionate.  
**Andromeda**, spectrum of, I, 222.  
*Andropogon sudanensis*, leaves, chlorophyll and proteins in, III, 76.  
*i*-Androstane, derivatives of, II, 367.  
**Androstane-3:17-diol 17-hydrogen succinate**, II, 367.  
**Androstanedione**, 5-chloro-, and 5-chloro-2-bromo-, II, 369.  
**Androstane-6:17-dione**, and its dioxime, II, 367.  
**Androstane-6:17-dione**, 3-bromo-, II, 367.  
*i*-Androstane-6:17-dione, and its dioxime, II, 367.  
**Androstane-3( $\beta$ ):5:6(*trans*)-triol-17-one acetates**, II, 26.  
**Androstan-3-ol-6:17-dione acetate**, II, 367.  
*i*-Androstan-6-ol-17-one, II, 367.  
**Androstan-17-ol-3-one**, 17-hydrogen succinate, II, 367.  
*i*-Androstan-17-ol-6-one acetate, II, 367.  
*i*-Androstan-6-one, II, 367.  
**Androstan-17-one**, and its semicarbazone, II, 264.  
 $\Delta^5$ -Androstene-3:17-diol, esters, II, 367.  
 $\Delta^2$ -Androstene-6:17-dione, and its oxide, II, 367.  
 $\Delta^4$ -Androstene-3:17-dione, 16-oximino-, II, 413.  
 $\Delta^5$ -Androstene-3:16:17-triol, synthesis of, II, 104.  
 $\Delta^5$ -Androsten-3-ol, and its derivatives, II, 367.  
   5:6-oxide, II, 365.  
 $\Delta^4$ -Androsten-6( $\alpha$ )-ol-3:17-dione, acetate, II, 26.  
 $\Delta^5$ -Androsten-3( $\beta$ )-ol-17-one acetate, hydrogenation of, II, 366.  
 $\Delta^5$ -Androsten-16-one, 3:17-dihydroxy-, diacetyl derivative, II, 413.  
 $\Delta^5$ -Androsten-17-one, 3-bromo-, II, 367.  
*c*-Androsterone  $\beta$ -glucoside, and its tetra-acetate, II, 352.  
*t*-Androsterone  $\beta$ -glucoside tetraacetate, II, 352.  
**Anethole**, addition of, to maleic anhydride, II, 354.  
   condensation of, after heating, II, 9.  
**Aneurin**, absorption and phosphorylation of, by yeast, III, 849.  
   chloride, effect of, on frog's heart, III, 153.  
   content of, in fetal human organs, III, 154.  
   deficiency of, blood-lactate-pyruvate relationship and its use in, in pigeons, III, 700.  
   carbohydrate metabolism in, III, 405.  
   determination of, III, 700.  
   light filters for, III, 620.  
   effect of, on carbohydrate metabolism in diabetes, III, 908.  
   iodide hydriodide, II, 120.  
   non-specificity of, in fat analysis, III, 908.  
   pyrophosphoric ester of, bond between, and apoenzyme, III, 406.  
   reduction rate of, III, 470.  
   disulphide, III, 470.  
   synthesis of, biologically, III, 154.  
   See also Thiamin and Vitamin-B<sub>1</sub>.  
**Aneurysm**, aortic. See under Aorta.  
   peripheral, surgical repair of, effect of sympathetic interruption during, III, 668.  
**Aneurysm**, pulmonary artery. See under Arteries, pulmonary.  
   saccular, intracranial, ocular signs of, III, 588.  
**Angina**, control of, with low-carbohydrate diet, III, 372.  
   Vincent's, treatment of, with nicotinic acid, III, 254.  
**Angina pectoris**, heart failure and, treatment of, by thyroidectomy, III, 96.  
   of atheromatous origin, treatment of, by cardiac vein ligation, III, 96.  
   treatment of, and coronary artery disease, with sex hormones, III, 440.  
   with cobra venom, III, 96.  
   with aortic insufficiency, in youth, III, 203.  
   with pain of atypical distribution, III, 440.  
**Angiocardiography**, contrast, film changer for, III, 714.  
**Angiography**, pharmacological action of contrast media for, III, 637.  
**Angioma**, cavernous, treatment of, with X-rays in children, III, 486.  
**Angiomatosis retinae**, treatment of, with X-rays, III, 681.  
**Angiotonin**, action of, on coronary vessels, III, 841.  
   hemodynamic effects of, in man, III, 296.  
   hypertension produced by, III, 99.  
   neutralisation of, by normal and ischaemic kidney blood plasma, III, 14.  
**Angiotoxin**, destruction of, compared with pressor amines, by renal extracts, III, 374.  
**Anhydrides**, determination of, II, 68.  
   dicarboxylic, condensation of, with heterocyclic amines, II, 31.  
   dipole moments and structures of, I, 289.  
   heat of hydrolysis of, I, 399.  
   reaction of, with anils, II, 149.  
**Anhydrobismnordeoxycholic acid**, methyl ester, II, 412.  
**Anhydrogalactose phenylmethylphenylsazone**, and its derivatives, II, 47.  
**Anhydrooxyprogesterone**, treatment with, of dysmenorrhoea, III, 603.  
   of meno-metrorrhagia and ovarian sterility, III, 386.  
**3:6-Anhydromethylhexosides** from methylhexopyranoside sulphates, II, 79.  
**Anhydro-oxyprogesterone**, tolerance to, in hysterectomy and ovariectomy, III, 813.  
   urinary sterol excretion after, III, 813.  
**Anhydrosarsapogenonic acid**, oxidation of, with permanganate, II, 177.  
**Anhydroscillaridin-A**, structure of, II, 81.  
**Anhydro-g-strophanthidin**, II, 396.  
**3:4-Anhydro-D-talosans**  $<1,5>\beta<1,6>$ , and its 2-*p*-toluenesulphonate, II, 303.  
**Anils**, autoxidation of, in diketohydrindene series, II, 329.  
   properties of, II, 399.  
   reactions of, II, 149.  
**Anilides**, halogenation of, I, 332.  
**Aniline**, and its hydrochloride, condensation of, with formaldehyde, II, 399.  
   diazotised, coupling of, with *m*-halogenophenols, II, 308.  
   effect of, on growth of rats, orally administered, III, 827.  
   equilibrium of, with chlorobenzene, I, 145.  
   extinction of fluorescence and photothermal decomposition of, I, 7.  
   spectrum of, Raman, I, 315.  
   in mixtures with cyclohexane, I, 315.  
**Aniline**, trinitro-derivatives, II, 306.  
**Aniline dyes**, effect of, on tumours, III, 465.  
**Aniline-formaldehyde resins**. See under Resins.  
*p*-Anilinoacetamidobenzenesulphonamide, II, 8.  
*Anilinoalkanoils*, chloronitro-, II, 306.  
*p*-Anilino-*p'*-anisidinoacetamidobenzenesulphonamide, II, 8.  
*p*-Anilino-*p'*-benzeneazoanilinoacetamidobenzenesulphonamide, II, 8.  
**1-Anilino benzthiazole ethiodide**, II, 154.  
**7- $\alpha$ -Anilinobenzylquinoline**, 8-hydroxy-, and its derivatives, II, 424.  
**1-6-Anilino-4 $\alpha$ -butadienylbenzthiazole ethiodide**, II, 154.

- 2- $\beta$ -Anilino- $\Delta^{\alpha\gamma}$ -butadienylquinoline, ethiodide, and its acetyl derivative, II, 155.  
methiodide, II, 156.  
 $\beta$ -Anilinobutyl alcohols, chloroamino- and chloro-nitro-derivatives, II, 306.  
 $\beta$ -Anilinoacetic acid,  $\beta$ -*p*-amino-, acetyl derivative, ethyl ester, II, 330.  
*p*-Anilino-diethylaminoacetamidobenzenesulphonamide, II, 8.  
 $\beta$ -Anilinoethyl alcohol, chloroamino- and chloro-nitro-derivatives, II, 306.  
Anilino-methylenecamphors, amino-, and their derivatives, II, 325.  
Anilino-methylene-*d*-camphor-4-imino-*d*-camphor, II, 325.  
1-Anilino-methyl-2-naphthol, 1-*p*-chloro-, II, 205.  
4-Anilino-methylquinoline, 2-hydroxy-, II, 150.  
*p*-Anilino-phenetidinacetamidobenzenesulphonamides, II, 8.  
Anilino-propyl alcohols, chloroamino- and chloro-nitro-derivatives, II, 306.  
*p*-Anilino-toluidinoacetamidobenzenesulphonamides, II, 8.  
2- $\beta$ -Anilino-vinylquinoline ethiodide, II, 155.  
*p*-Anilino-*o'*-xyli-dinoacetamidobenzenesulphonamide, II, 8.  
2- $\beta$ -Anilino- $\Delta^{\beta}$ -butenylidene-1-methyl-1:2-dihydroquinoline, II, 156.  
1-Anilino-2-ethylbenzothiazoline, II, 154.  
Animals, aquatic, depot fats of, III, 564.  
body weight and organ weight of, III, 33.  
determination in, of water, III, 360, 426, 427.  
fertilisation and sexuality in, materials for, III, 141.  
holder for, III, 502.  
Anisotropism, mechanism and kinetics of, I, 148.  
Anisaldehyde dimethylthiosemicarbazone hydriodides, II, 190.  
Aniseikonia, III, 590, 743.  
*o*-Anisidine, dipole moment of, I, 9.  
*m*-Anisidine, 2:4:5:6-tetrachloro-, and its derivatives, II, 90.  
4-*p*-Anisidinomethylquinoline, 2-hydroxy-, II, 150.  
Anisole, 3-fluoro-2:6- and -4:6-dinitro-, II, 52.  
2:3:5-trihydroxy-, triacetyl derivative, II, 10.  
Anisole-*p*-sulphondimethylamide, II, 140.  
Anisole-1:2:5:6-tetracarboxylic acid, II, 47.  
Anisotropy, diamagnetic, I, 259.  
inherent and photo-elastic, distinction between, I, 261.  
molecular, I, 317.  
4-*o*-Anisoxylaniline, 3:5-diiodo-, and its acetyl derivative, II, 94.  
4-*m*-Anisoxylaniline, 3:5-diiodo-, and its derivatives, II, 94.  
4-*o*-Anisoxylbenzaldehyde, 3:5-diiodo-, II, 94.  
4-*m*-Anisoxylbenzaldehyde, 3:5-diiodo-, and its 2:4-dinitrophenylhydrazones, II, 94.  
4-*o*-Anisoxylbenzoic acid, 3:5-diiodo-, II, 94.  
4-*m*-Anisoxylbenzoic acid, 3:5-diiodo-, II, 94.  
4-*o*-Anisoxylbenzonitrile, 3:5-diiodo-, II, 94.  
4-*m*-Anisoxylbenzonitrile, 3:5-diiodo-, II, 94.  
4-*o*-Anisoxynitrobenzene, 3:5-diiodo-, II, 94.  
4-*m*-Anisoxynitrobenzene, 3:5-diiodo-, II, 94.  
4-*m*-Anisoxylphenylacrylic acid,  $\alpha$ -amino- $\beta$ -3:5-diiodo-,  $\alpha$ -benzoyl derivative, II, 94.  
 $\gamma$ -Anisoxylbutyric acid, ethyl ester, semicarbazone, II, 57.  
 $\beta$ -*o*-Anisoxylpropionic acid, and its derivatives, II, 257.  
 $\beta$ -*p*-Anisoxylpropionic acid, ethyl ester, II, 257.  
 $\beta$ -Anisylacrylic acids,  $\alpha$ -cyano-, ethyl esters, II, 259.  
Anisylamine picrate, II, 76.  
5-*p*-Anisylbenzofuran-1':2':3:4- $\Delta^2$ -cyclohexen-1-one, II, 179.  
5-*p*-Anisylbenzofurano-1':2':3:4- $\Delta^2$ -cyclohexen-1-one-6-carboxylic acid, ethyl ester, and its derivatives, II, 179.  
 $\gamma$ -*o*-Anisylbutyrolactone, II, 257.  
 $\gamma$ -*p*-Anisyl-*p*-carboxyphenylhexan- $\gamma$ -ol, II, 58.  
 $\gamma$ -*p*-Anisyl-4-*p*-cyanophenylhexan- $\gamma$ -ol, II, 58.  
 $\gamma$ -*p*-Anisyldecalactone, II, 257.  
*p*-Anisyl- $\gamma$ -diethylaminopropylcarbinol, II, 193.  
3-*p*-Anisyl-3:4-dihydroquinazol-4-one, II, 205.  
 $\gamma$ -*p*-Anisylheptolactone, II, 257.  
*p*-Anisyl hexahydrobenzyl ketone, and its derivatives, II, 362.  
 $\gamma$ -*p*-Anisylhexoic acid, lactone, and  $\gamma$ -hydroxy-, II, 257.  
4-*o*-Anisylhydantoin, II, 271.  
Anisylidene-*p*-hydroxydeoxybenzoin, II, 316.  
5-*p*-Anisyl-3:4-[2'-1'-(5'-methoxycoumarano)]- $\Delta^2$ -cyclohexen-1-one, and its derivatives, II, 268.  
2-*p*-Anisyl-3:4-[1':2'-(5'-methoxycoumarano)]- $\Delta^2$ -cyclohexen-6-one-1-carboxylic acid, ethyl ester, II, 268.  
*p*-Anisyl *p*-methoxyhexahydrobenzyl ketone. See Hexahydrodeoxyanisoine.  
 $\gamma$ -*p*-Anisyl- $\epsilon$ -methylheptolactone, II, 257.  
 $\delta$ -*p*-Anisyl- $\gamma$ -methylhexan- $\gamma$ -ol, *p*-nitrobenzoate, II, 362.  
 $\gamma$ -*p*-Anisyl- $\delta$ -methylhexolactone, II, 257.  
4-*p*-Anisyl-4-methylhydantoin, II, 271.  
 $\gamma$ -*p*-Anisyl- $\zeta$ -methylolactone, II, 257.  
 $\gamma$ -*p*-Anisylolactone, II, 257.  
*p*-Anisyl  $\gamma$ -phenoxypropyl ketone, II, 176.  
*p*-Anisyl- $\gamma$ -piperidinopropylcarbinol, II, 193.  
 $\beta$ -*o*-Anisylpropaldehyde, derivatives of, II, 174.  
*p*-Anisylpropionophenone, II, 223.  
 $\beta$ -*m*-Anisylisopropylaminoformic acid,  $\beta$ -chloro-, and  $\omega$ : $\beta$ -dichloro-, ethyl esters, II, 189.  
*o*-Anisylsuccinic anhydride, condensation of, with *o*- and *m*-tolyl methyl ethers, II, 285.  
3-*p*-Anisyl-1:2:3:4-tetrahydroquinazol-4-one, II, 205.  
 $\gamma$ -Anisyl- $\alpha$ -tetramethyldiaminodiphenylallene, II, 194.  
*o*-Anisylthiol-*p*-benzoquinone, II, 24.  
3-*a*-Anisyl- $\beta$ -*p*-toluylethylidavanone, II, 327.  
3-*a*-*p*-Anisyl- $\beta$ -*p*-toluylethylidavanone, II, 327.  
*o*-Anisyltrimethylammonium perchlorate, II, 221.  
 $\gamma$ -*p*-Anisylvaleric acid, lactone, and  $\gamma$ -hydroxy-, II, 257.  
Anisylxanthyleneallene, II, 194.  
Anode effect, excitation of, I, 311.  
Anestrus, treatment of, with stilboestrol dipropionate in domestic animals, III, 602.  
*Anolis*, pituitary of, melanophore hormone secretion in, diurnal rhythm of, III, 385.  
*Anolis carolinensis*, sexual behaviour and urogenital system of, effect of castration, seasons, and sex hormones on, III, 890.  
Anolobine, constitution of, II, 385.  
Anorectal infections. See under Infections.  
Anorexia disease. See under Diseases.  
Anorexia nervosa, III, 392.  
diagnosis of, and Simmonds' disease, III, 809.  
endocrine factors in, III, 467.  
vitamin-K deficiency in, purpura due to, III, 798.  
Anorthite-epidote-garnet-hornfels, from Namaqualand, S. Africa, I, 122.  
Anosognosia, III, 586, 885.  
Anoxemia, carbon monoxide, effect of, on lymph flow and composition, III, 199.  
due to carbon monoxide and low oxygen, effect of, on cerebrospinal fluid pressure, III, 220.  
effect of, on bile flow and urine in nembutalised dog, III, 206.  
Anoxia, acute, adrenal cortex in, rôle of, III, 375.  
treatment of, with drugs, III, 297.  
autonomic and somatic centre excitability differences in response to, III, 735.  
effect of, on blood-sugar in adrenalectomised pancreatectomised dogs, III, 581.  
on coronary blood flow, III, 577.  
in anaesthesia and surgery, III, 101.  
lethal effects of, drug prophylaxis against, III, 670.  
maintenance of life in newborn during, III, 581.  
peripheral vascular responses to, III, 375.  
resistance to, with reference to high-altitude flying, III, 15.  
response of vago-insulin system to, in adrenalectomised dogs, III, 803.  
Ants, origin of castes in, III, 900.  
See also *Pheidole morrisi*.  
Antacids, effect of, in stomach, III, 142.  
Antelope. See *Rhynchotragus kirkii nyikae*.  
Antennaless, exhibition of, in relation to nutrition, III, 364.  
Anthelmintics, copper-nicotine mixtures, III, 414, 631.  
organic sulphur compounds, III, 631.  
phenothiazine, III, 414, 631.  
synthetic, II, 257.  
Anthoxlor pigments. See under Plants, pigments of.  
Anthoeyanidins, pigments like, from  $\alpha$ -naphthoquinols, II, 110.  
Anthoxanthins, fluorescence reactions of, II, 110.  
Anthraxene, carcinogenic effect of, and its derivatives, III, 397.  
equilibrium of, with picric acid, I, 398.  
purification of, II, 137.  
Anthraxite dust, effect of inoculation with tubercle bacilli mixed with, III, 262.  
Anthraxosis, pigment of, III, 375.  
9-Anthraldehyde, colouring matters from, II, 284.  
Anthrannilic acid, dissociation constants of, in glacial acetic acid, I, 367.  
2-9'-Anthranylbzopyrone, 7-hydroxy-, II, 285.  
Anthraquinone, derivatives, nitration of, kinetics of, II, 58.  
Anthraquinone, 1:4:6:7-tetrachloro-, and -tetrahydroxy-, and its tetra-acetate, II, 177.  
Anthraquinone dyes, acid, constitution and absorption spectra of, II, 229.  
 $\beta$ -2-Anthraquinonylacrylic acid,  $\beta$ -1-chloro-, II, 112.  
Anthrax, cutaneous, treatment of, with neosalvarsan and sulphapyridine, III, 411.  
infection with, effect of sulphanilamide compounds on, III, 335.  
Anthr-9-one, 10-hydroxy-, benzoyl derivative, II, 228.  
 $\gamma$ -9-Anthranyl-2-*n*-butyric acid, and its methyl ester, II, 7.  
Anthropology, physical, III, 6.  
of Vedda of Ceylon, III, 285.  
Anthropometry, nomenclature in, III, 507.  
Antibacterial substances, surface behaviour of, III, 639.  
Antibodies, anti-pneumococcus action of papain on, III, 177.  
bone-marrow changes produced by, III, 793.  
brain, and their relation to demyelination, III, 587.  
cyto-, demonstration of, *in vitro*, III, 945.  
determination of, in antisera, III, 498.  
in immunology, III, 498.  
effect of character of, on flocculation velocity, III, 572.  
flocculating, of rabbit antisera, effect of heat on, III, 69.  
fluorescent, immunological properties of, III, 65.  
for crystalline insulin, III, 809.  
formation of, in cutaneous immunisation, III, 274.  
preparation of, *in vitro*, III, 720.  
protein of, reaction of, with dietary nitrogen in immunity, III, 945.  
reaction of, with antigens, III, 720.  
valency of, and their antigen precipitates, III, 784.  
Anticoagulants, 3:3'-methylenebis-(4-hydroxycoumarin), III, 873.  
sodium hexametaphosphate, III, 872.  
Antidiuretics, in placenta and urine, pituitrin compared with, III, 810.  
Antifertilizin, sea urchin, III, 659.  
Antigens, albumin, III, 874.  
artificial, with agar, cherry gum, and gum acacia, III, 720.  
blood-group, in dead organs, III, 794.  
cancer and, III, 617.  
chemically marked, II, 118.  
complement fixation by, III, 946.  
complexes of, heated with serologically unspecific proteins, III, 70.  
for complement fixation tests with central nervous system virus infections, III, 855.  
Frei, comparison of, III, 498.  
groups, in man, III, 274.  
Kolmer, complement for use with, III, 355.  
non-precipitating, III, 945.

- Antigens**, organ, serological specificity of, III, 857.  
protein, non-precipitating, III, 354.  
reaction of, with antibodies, III, 720.  
slide-test, III, 651.  
impurities from, III, 651.  
standardisation of, for flocculation test, III, 651.  
Wassermann, association of, with heavy materials in tissues, III, 783.
- Antigonadotropin**, in serum and milk of goat, III, 133.
- Antihormones**, III, 810.
- Antimalarials**, II, 206.  
sinine, III, 480.  
sulphathiazole as, III, 410.
- Antimonic acid**. See under Antimony.
- Antimony**, explosive, structure of, I, 354.  
films, secondary emission from, I, 311.  
magnetic properties of, I, 169.  
resonance absorption of neutrons in, I, 286.  
spectrum of, I, 221.
- Antimony alloys**, with aluminium, bismuth, and lead, I, 394.  
with copper, superstructure of, I, 390.  
with copper and magnesium, I, 394.  
with copper and nickel, I, 93.  
with nickel,  $\alpha$ -phase of, I, 92.  
with tin, magnetic susceptibilities of, I, 169.  
resistivity temperature curves of, I, 231.
- Antimony trihalides**, electric moments of, in dioxan, I, 234.  
sulphide, equilibrium of, with cobalt sulphide, I, 329.
- Antimonic acid**, physical chemistry of, I, 406.
- Antimony determination** :—  
determination of, in presence of tin and lead, I, 73.  
polarographically, I, 279.  
with rhodamine-B, I, 155.  
with titanous sulphate, I, 341.
- Antiplasmodial action and constitution**, II, 288.
- Antipyrinaldehyde**. See 5-Keto-1-phenyl-2:3-dimethylpyrazole-4-aldehyde.
- Antisell, T.**, notebooks of, I, 215.
- Antiseptics**, aminoacridines, III, 718.  
containing soap and alcohol, toxicity of, III, 547.  
effect on, of wetting agents, III, 643.  
emulsions of, for superficial granulating areas, III, 840.  
mercury, effect of agar on, III, 61.  
salicylic acid, III, 648.  
toxicity of, III, 922.  
undiluted, effect of, on tissues, III, 163.
- Antiseptic activity**, constitution and, III, 718.
- Antisera**, against blood *M* and *N* factors, preparation and use of, III, 435.  
flocculation velocity of, influence of antibody on, III, 572.  
serological reactions of, effect of heat on, III, 945.  
treatment with, antitoxin, and sulphonamides, of cerebrospinal fever, III, 545.
- Antispasmodics**, morpholinoalkyl derivatives, II, 334.
- Antisterility factor**. See Vitamin-E.
- Antithrombin**, determination of, in plasma and serum, quantitatively, III, 732.
- Antitoxins**, storage of, in war-time, III, 274.  
treatment with, antiserum, and sulphonamides, of cerebrospinal fever, III, 545.  
blood-serum reactions after, III, 179.
- Antonoff's rule**, validity of, I, 325.
- Antrum**, cysts of, chemical composition of fluid from, III, 462.
- Antrypol**. See Bayer 205.
- Anura**, adult, limb regeneration induction in, III, 726.
- Anuria**, III, 246, 532.  
after sulphapyridine treatment, III, 260.  
after sulphapyrimidine treatment, III, 162.  
experimental, cause of death in, III, 246.  
effect on, of adrenal cortical extract and deoxycorticosterone acetate, III, 809.  
traumatic, renal lesion in, III, 530.
- Anus**, atresia of, and rectum, III, 243.
- Anus**, fissure of, treatment of, oil-soluble anaesthetics in, III, 549.
- Aorta**, aneurysm of, dissection of, III, 668.  
treatment of, by venesection and phenylhydrazine, III, 513.
- Arch** of, bodies developed from, in cats, III, 80.  
right-sided, III, 281.  
transposition of, III, 506.  
variation of, in man, III, 658.
- ascorbic acid** content of, III, 912.
- atheroma** in, in renal hypertensive rabbits, III, 669.
- atheromatous**, acetone-soluble lipin of, III, 878.
- atresia** of, with hypoplasia of left ventricle, III, 97, 506.
- coarctation** of, III, 296, 668.  
in childhood, III, 440.  
peripheral resistance in, III, 97.  
radiology of, III, 204.
- elastic properties** of, in relation to age in rabbits, III, 802.
- isthmus stenosis** of, III, 440.
- right-sided**, III, 79.
- right-sided and retro-oesophageal localisation** of, III, 430.
- rupture** of, into pulmonary artery, III, 440.
- valve insufficiency** in, due to syphilis, III, 13.
- Apatite**, carbonate, formation of, in aqueous solutions, I, 404.  
in bone and teeth substance, X-ray diffraction of, III, 900.  
isomorphous forms of, I, 404.
- Apatite dust**, effect of, on animal organism, II, 262.
- Apellis quadracus**, gametogenesis in, effect of light and temperature on, III, 791.
- Aphanomyces euteiches**, growth and nutrition of, III, 786.
- Aphasia**, distributed word-finding and thinking in, III, 674.
- Aphids**, wings in, sensoria in relation to, III, 5.
- Apigenin 7:4'-diacetate**, II, 149.
- Apis mellifica**, nutrition of, III, 152.
- Aplasia**, of optic nerve. See under Nerves.
- Apoenzyme**, bond between, and aneurin pyrophosphate, III, 406.
- Apophyllite**, skeletonised, from California, I, 220.
- Appendicitis**, III, 243.  
acute, treatment of, with sulphapyridine intraperitoneally, III, 920.  
diagnosis of, value of leucocyte and differential count in, III, 196.  
mortality in, III, 243.  
oxyuriasis and, III, 457.  
treatment of, with sulphanilamide, intraperitoneally, III, 920.  
with complete situs inversus, III, 789.
- Appendix**, physiological behaviour of, in man, III, 394.
- Appetite**, excessive, in maladjusted children, III, 240.
- Apples**, treatment of, with hydrocyanic acid, zymasis in, III, 358.
- Apple trees**, seeds, oil from, III, 425.  
sterol from, III, 722.
- DO Aquile 1925**, spectrum of, I, 190.
- Aquo-ammonio-phosphoric acids**, II, 281, 406.
- Aquopentamminocobaltic sulphate**, equilibrium of, with sulphatopentamminocobaltic sulphate, I, 401.
- D-Arabinal**, reaction of, and its acetate with hydrogen peroxide and osmium tetroxide in *tert.*-butanol, II, 79.
- L-Arabinose tetrapropionate**, II, 79.
- Arabogalactan**, constitution of, II, 219, 397.  
and its derivatives, II, 134.
- 2-D- and -L-Arabotetrahydroxy-*n*-butylbenziminazoles**, II, 393.
- Arachidonic acid**, structure of, and its methyl ester, II, 186.
- Arachis hypogaea**, proteins of, *d*-threonine in, and their nutritional value, III, 905.
- Arachnodactyly**, eye findings in, III, 113.  
in Chinese infant, III, 430.  
with lens dislocation. See Marfan's syndrome.
- Arbacia**, eggs, cortical layer response to stimulating agents in, III, 188.  
effect on, of X-rays, III, 567.  
extracts of, sperm activation by, III, 567.  
vital dyes on, III, 867.
- fertilisation membrane** of, disintegration of, by enzyme, III, 141.
- hermaphroditism** in, III, 81.
- sperm extracts** and fertilisation reaction in, III, 5.
- Arbacia punctulata**, eggs, half, development of, III, 284.  
metabolism of, III, 727.  
nucleus of, osmotic properties of, III, 868.  
relation of size of, to centrifugal force, III, 567.  
gametes, effect on, of X-rays, III, 933.  
twins, triplets, and quadruplets in, III, 188.
- Arbutin**, in Ericaceae, III, 182.
- Arecaidine**, synthesis of, II, 38.
- Arecoline**, synthesis of, II, 38.
- Arenobufogenin**, II, 323.
- Arenobufotoxin**, II, 323.
- Argemone oil**, chemical test for, and its application to dropsy-positive mustard oils, III, 928.  
dropsy induced by, in relation to mustard oil, III, 712.
- Arginase**, III, 489.  
intestine, kidney, and liver, effect of testosterone propionate on, III, 777.  
specificity of, III, 341.
- Arginine**, citrulline conversion into, in kidney, III, 331.  
deamination of, by *Bacillus coli* from rat's skin, III, 270.  
determination of, colorimetrically, II, 292.  
microchemically, II, 160.  
hydrolysis of, I, 243.
- Argininic acid**, action on, of arginase, III, 341.
- Arginylarginine**, and its derivatives, II, 350.
- Argon**, adsorption of, on glass plates, I, 170.  
*m.p.*-pressure curves of, I, 89.  
radioactive, I, 33.  
triple-point pressure of, I, 139.
- Argon determination** :—  
determination of, in nitrogen-oxygen mixtures, I, 243.
- Argyria**, III, 337.
- Argyrophil matrix**, change of, in old animals, III, 190.
- Arhinencephaly**, III, 586.
- Ariboflavinosis**, in premature infant, III, 701.
- Arius jella**, development of, III, 362.
- Aromatic compounds**, I, 197.  
*B*-electrons of, I, 197.  
introduction of amino-groups into nucleus in, II, 169.  
molecular orientation of substituents in, II, 303.  
nuclei, conjugation of double bonds with, II, 354.  
polynuclear, mol. wt. and oxidation of, II, 226.  
side-chain reactions of, I, 148, 204.  
substitution in, II, 52.
- Aromatic compounds**, iodo-derivatives, synthesis of, II, 88.
- o-Aroyloxyacetarones**, conversion of, into *o*-hydroxydinaphthoylemethanes, II, 236.
- Arrhenoblastoma**, III, 892.
- Arrow poisons**. See under Poisons.
- Arsenates**. See under Arsenic.
- Arsenic**, poisoning by. See under Poisoning.
- Arsenic compounds**, distribution of, in cockroach, III, 901.  
effect of, on bone growth, III, 828.  
electrocardiographic abnormalities associated with, III, 711.  
in fish, III, 35.  
in food, III, 537.  
in tissues and urine after mapharsen injection, III, 168.  
in urine, with and without exposure to spray residues, III, 170.  
ingestion and excretion of, in man, III, 52.  
sensitivity to, vitamin-C in relation to, III, 634.

- Arsenic compounds**, treatment with, by intravenous drip method, III, 413.  
detoxifying action of vitamin-C in, III, 711.  
of syphilis, III, 634, 711, 843.
- Arsenic trifluoride**, heat capacity, heats of fusion and vaporisation, vapour pressure, and entropy of, I, 50.
- Trihalides**, electric moments of, in dioxan, I, 234.
- Trihydride**, preparation of, electrolytic cell for, III, 864.  
reaction of, with chloramine-T, I, 181.
- trisulphide**, colloidal, I, 56.  
hydrosols, coagulation of, I, 61.
- Arsenates**, alkaline-earth, I, 373.  
determination of, by molybdenum-blue reaction, I, 112.
- Meta-arsenic acid**, non-existence of, I, 275.
- Pyroarsenic acid**, non-existence of, I, 275.
- Arsenic organic compounds** :—  
**Arsenious acid**, esters, II, 343.
- Arsenic determination** :—  
determination of, by Gutzzeit test, zinc-copper alloy for, I, 112.  
colorimetrically, I, 71, 183, 339.  
in biological material, III, 428, 656, 864.  
in hair and nails, III, 280.  
in organic compounds, II, 339.  
microchemically, I, 183.  
Reinsch test for, I, 71.
- Arsenicals**, organic, in peace and war, II, 41.  
treatment with, of sleeping sickness and syphilis, III, 925.
- Arsenocholine chloride**, lecithin synthesis in rats fed, III, 915.
- 2-Arseno-1-hexamolybdiic acid**, structure, formation, and properties of, I, 275.
- p-Arsenophenylsulphondimethylamide**, II, 386.
- p-Arsenophenylsulphon-N-phenyl-N-benzylamide**, II, 386.
- Arsenotrimolybdiic acid**. See 2-Arseno-1-hexamolybdiic acid.
- Arsine**. See Arsenic trihydride.
- Arsine oxides**, base strength of, and analogous nitrogen and sulphur compounds, I, 266.
- Arsinic acids**, aliphatic, II, 336.
- Arsinoacetic acid**, dichloro-, II, 336.
- 4-Arsinodiphenyl-4'-sulphonic acid**, 4-diiodo-, sodium salt, II, 158.
- p-Arsinophenylsulphondimethylamide**, II, 386.
- p-Arsinophenylsulphondimethylmorpholide**, II, 386.
- p-Arsinophenylsulphondimethylpiperidide**, II, 386.
- p-Arsinophenylsulphon-N-phenyl-N-benzylamide**, II, 386.
- p-Arsinophenylsulphon-N-phenyl-N-benzylmorpholide**, II, 386.
- p-Arsinophenylsulphon-N-phenyl-N-benzylpiperidide**, II, 386.
- p-Arsinophenylsulphon-p-xenylamide**, II, 386.
- p-Arsinophenylsulphon-p-xenylmorpholide**, II, 386.
- p-Arsinophenylsulphon-p-xenylpiperidide**, II, 386.
- p-Arsinoxidophenylsulphondimethylamide**, II, 386.
- p-Arsinoxidophenylsulphondimethylmorpholide**, II, 386.
- p-Arsinoxidophenylsulphondimethylpiperidide**, II, 386.
- p-Arsinoxidophenylsulphon-p-xenylamide**, II, 386.
- p-Arsinoxidophenylsulphon-p-xenylmorpholide**, II, 386.
- p-Arsinoxidophenylsulphon-p-xenylpiperidide**, II, 386.
- Arsonium compounds**, II, 121.
- Arsphenamine**. See Salvarsan.
- Artefolin**, III, 499.
- Artemia**, excystment rate of, effect of salinity on, III, 612.
- Artemisia tridentata**, oil of, II, 27.
- Artemisol**, II, 27.
- Arteries**, atheromatous lesions in, in rabbits of high-cholesterol diets, III, 373.  
coronary, disease of, perforation of infarcted interventricular septum in, survival after, III, 578.  
treatment of, and angina pectoris, with sex hormones, III, 440.
- Arteries**, hypogastric, in American whites and negroes, III, 361.  
normal and sclerotic, iodine distribution in walls of, III, 802.  
obturator, origin of, III, 565.  
peripheral, obstruction in, diagnosis of, III, 205.  
pulmonary, aneurysm of, due to syphilis, III, 802.  
compression of, electrocardiograph changes after, III, 578, 665.  
renal, loop of, in dogs, III, 878.  
retroduodenal, III, 281.  
splenic, anatomy of, III, 429.  
tibial, changes in, compared with radial and coronary arteries, III, 98.  
See also Aorta, Carotid, etc.
- Arteriography**, cerebral, with diodrast, III, 204.
- Arteriosclerosis**, etiology and causative mechanism of, III, 373.  
fibrinoid necrosis in, III, 878.  
in relation to diabetic neuritis of lower extremities, III, 580.
- Arteritis**, necrotising, produced by mercuric chloride, III, 442.
- Arteritis obliterans**, traumatic, III, 929.
- Arthralgia**, menopausal, treatment of, with stilbestrol, III, 524.
- Arthritis**, atrophic, juvenile, cornea opacity associated with, III, 22.  
pathology of, III, 725.  
treatment of, jaundice induced in, III, 458.  
with vaccines, III, 497.  
chronic, associated with leucopenia, splenomegaly, and hepatomegaly. See Felty's syndrome.  
chemotherapy of, in mice, III, 926.  
diet in, III, 38.  
treatment of, with bee venom, III, 928.
- coccidioidal**, treatment of, with sulphanilamide, III, 628.
- enzymic hydrolysis of hyaluronic acid in**, III, 935.
- infectious**, treatment of, with vitamin-D, III, 913.
- of finger joints**, heredity in, III, 185.
- rheumatoid**, agglutination in, III, 648.  
diagnosis of, Mester's test in, III, 355.  
indoluria in, III, 321.
- spinal**, treatment of, with X-rays, III, 486.  
treatment of, iontophoresis using vaso-dilating drugs for, evaluation of, III, 637.  
with bee venom, III, 637.  
with gold colloid and other heavy metal colloids, III, 337.
- streptococcal**, effect of immunisation on, III, 854.  
treatment of, with intestinal bacilli, III, 718.
- Arthropodium leptocladum**, alkaloids of, II, 38.
- Artibeus jamaicensis parvipes**, placentation of, III, 283.
- Artichokes**, fructose from, III, 655.  
Jerusalem, growth of tissue cultures of, III, 562.  
physiology of, III, 357.
- Aryl isocyanodichlorides**, reactions of, II, 169, 274.  
halides, distortion polarisation of, I, 91.
- Aryl radicals**, coupling of, II, 101.  
short-lived, II, 84.
- Arylamines**. See Amines, aromatic.
- Arylazo- $\beta$ -naphthylamines**, decomposition of, by acetic acid and sodium nitrite, II, 139.  
by alcoholic hydrochloric acid, II, 51.  
diazonium salts, reactions of, II, 308.
- Arylazo-oximes**, metallic derivatives, II, 88.
- 3-Aryl- $\Delta^1$ -cyclohexenes**, synthesis of, II, 252.
- Arylolefines**, restricted rotation in, II, 93.
- Arylsulphonic acids**, amino-, identification of, II, 169.
- Arylthiocarbimides**, action on, of chlorine, II, 169, 274.
- Asbestos**, chrysotile, N. Caucasus, I, 348.
- Ascaris**, infestation with, treatment of, with phenothiazine, in dogs, III, 415.
- Ascaris lumbricoides**, glycogen of, from pigs, III, 532.
- Ascidia**, embryonic induction in, III, 81.
- Ascorbic acid**, calcium salt, effect of, on bone regeneration in rats, III, 911.  
combined, urinary, splitting of, III, 899.  
complex formation by, with formaldehyde, III, 407.  
content of, in maritime province foods, III, 255.  
in pregnant cow's milk, III, 833.  
decomposition of, photochemically, III, 763.  
in ultra-violet, I, 304, 333.  
determination of, in blood, III, 12, 622.  
in plants, III, 278.  
effect of, on bone regeneration in rats, III, 911.  
on gonadotropic hormone activity, III, 522.  
on survival of traumatised animals, III, 763.  
excretion of, after administration to normal and tubercular subjects, III, 912.  
in urine, after vitamin intake, III, 763.  
extinction of fluorescence by, I, 164.  
extraction of, from plant tissue, III, 407.  
in aorta, III, 912.  
in blood. See under Blood.  
in Fallopian tube during menstrual cycle and pregnancy, III, 912.  
in goat tissues, III, 622.  
in milk, III, 41.  
mastitis in relation to, III, 329.  
in oranges, III, 473.  
in plasma. See under Blood-plasma.  
in raw cabbage, disappearance of, after chopping or mincing, III, 702.  
in tissues, III, 40, 41.  
metabolism of. See under Metabolism.  
oxidation of, effect of halides on, III, 329.  
in presence of copper, III, 763.  
in presence of copper sulphate, I, 332.  
in presence of tea infusions, III, 833.  
progesterone-like effect of, on endometrium, III, 135.  
reaction of, with ascorbic acid oxidase, III, 776.  
relation of, to reproduction in cows, III, 472.  
requirement of, for individuals in institution, III, 621.  
for premature infants, effect of diet on, III, 763.  
synthesis of, by animal tissue *in vitro*, III, 472.  
effect of pituitary on, in dogs, III, 833.  
in rats, III, 762.  
tolerance test of, and its application to senile and schizophrenic patients, III, 472.  
treatment with, of dermatitis, III, 551.  
of periodontal disturbances, III, 911.  
of tooth extraction wounds, III, 472.  
of whooping cough, III, 472.  
See also Vitamin-C.
- l-Ascorbic acid**, action of, on heart and uterus, III, 911.  
on isolated frog heart, III, 665.
- Ash trees**, seeds, oil from, III, 425.  
Southern prickly. See *Xanthorylum clava-herculis*.
- Aspartic acid**, relation of, to growth, III, 468.  
synthesis of, II, 46.
- l-(+)-Aspartic acid**, action on, of liver and kidney slices, III, 541.
- Aspergillus clavatus**, bactericidal action of, III, 490.
- Aspergillus fumigatus**, fumigatin from, III, 420.
- Aspergillus niger**, nutrition of, with sulphur and trace elements, III, 778.
- Asphyxia**, carbon monoxide, resistance to, of rodents, age and species difference in, III, 581.  
cerebral changes after, III, 884.  
effect of, on coronary blood flow, III, 577.  
prevention of, "head-up" position in, in infants, III, 207.  
resuscitation after, with inert gases, III, 375.
- Assimilation**. See under Plants.
- Astacene**, surface chemistry of, I, 142.
- Asterias forbesii**, eggs of, cytoplasm and nucleolus in, III, 868.
- Asthma**, allergic, due to kamala powder, III, 652.  
treatment of, in rabbits, III, 946.
- Alternaria** specificity in, III, 71.

- Asthma**, bronchial, III, 879.  
 degradation theory of, III, 443.  
 due to gum acacia sensitivity, III, 879.  
 due to water fleas, III, 71.  
 treatment of, with sulphonamides, III, 336.  
 bronchoscopy of, in children, III, 671.  
 chronic, arm-tongue circulation in, III, 734.  
 due to insect emanations, III, 71.  
 effect on, of potassium and sodium intake in children, III, 710.  
 endocrine glands in, III, 115.  
 experimental, treatment of, with histaminase, III, 443.  
 food allergy in, treatment of, III, 946.  
 juvenile, treatment of, with vaccines, III, 495.  
 occupational, III, 15.  
 premenstrual, blood-oestrogenic hormone determinations in, III, 688.  
 treatment of, rectal ether and aminophyllin in, III, 484.  
 with diet, III, 443.  
 with sulphonamido derivatives, III, 479.
- Astigmatism**, axis change of, on accommodation, III, 222.
- Astragalus wootoni*, constituents of, III, 950.
- Astrocytomata**, bulbar, pontal and mesencephalic, III, 17.
- Astrophysics**, technique in, I, 250.
- Asymmetric transformations**, first- and second-order, II, 312.
- "Atabrine"** treatment with, of *Giardia intestinalis* infestation, III, 924.
- Ataxia**, hereditary, in rabbits, III, 659.
- Atebrin**, effect of, on cysticercosis in mice, III, 162.  
 treatment with, of giardial infestation in man, III, 162.
- Atelectasis**, with spontaneous pneumothorax, III, 443.
- Atheroma**, aortic. See under **Aorta**.  
 biochemistry of, in animals, III, 668.
- Atheromatosis**, aetiology and causative mechanism of, III, 373.  
 from methylcellulose, III, 668.
- Atherosclerosis**, experimental, and soya lecithin, III, 442.  
 effect on, of testosterone propionate and oestradiol dipropionate, III, 441.  
 genesis of, III, 100.
- Athetosis**, neurology of, III, 377.
- Athlete's foot**, control of, III, 547.  
 fungicides for preventing spread of, testing of, III, 411.
- Atisine**, and its derivatives, II, 335.
- Atlas**, posterior arch of, absence of, III, 506.
- Atmosphere**, condensation nuclei in, I, 120.  
 haze in, optics of, I, 44, 196.  
 hot, reaction of various animals to, III, 637.  
 low energy cosmic ray electrons in, I, 237.  
 pressure of. See under **Pressure**.  
 sulphur dioxide fluctuations in, I, 120.  
 upper, constitution of, I, 285.  
 See also **Air**.
- Atoms**, binding energy of, I, 85.  
 collisions in, I, 130.  
 $\beta$ -decay of, pseudoscalar mesotron theory of, I, 130.  
 disintegration of, apparatus for, I, 342.  
 electron affinity of residues of, I, 191.  
 energy levels of, interaction of, I, 309.  
 exchange forces in, I, 37.  
 excited, processes initiated by, I, 372.  
 heavy, structures of, from X-ray spectra, I, 349.  
 internal diamagnetic fields of, I, 130.  
 nuclei of, I, 255.  
 electrostatic generator for research on, I, 117.  
 heavy, disruption of, I, 287.  
 tensor forces in, I, 384.  
 isomerism of, I, 4, 163, 311.  
 interaction of slow neutrons with, I, 123.  
 light, theory of, and tensor forces, I, 224.  
 mesotron theory of, I, 130.  
 $\alpha$ -models of, I, 382.  
 $\alpha$ -model and moments of, I, 130.  
 physics of, I, 32, 192.  
 $\gamma$ -rays from, I, 34.  
 scattering by, I, 32.  
 of photo-neutrons, I, 4.
- Atoms**, nuclei of, spin of,  $\beta$ -decay and orbital electron capture and, I, 286.  
 symmetry properties of, I, 192.  
 track of particles from, in photographic emulsions, I, 80.  
 opposed axial orientation of, in electric fields, I, 161.  
 packing fraction curve for, I, 382.  
 physics of, I, 128.  
 spectra of, I, 190.  
 spinless, forces in coupling of, I, 256.  
 streams of, of known intensity, I, 411.
- Atomic volume**. See under **Volume**.
- Atomic weights**, bromine, I, 78.  
 calcium, I, 311.  
 carbon, I, 255, 311.  
 chlorine, I, 255.  
 determination of, by vapour density method, I, 255.  
 fluorine, I, 78, 311, 382.  
 potassium, I, 78.  
 silver, I, 78.  
 specific heat and, I, 49.  
 zinc, I, 255.
- Atophan**, dibenzthiophen derivatives resembling, II, 62.
- Atopy**, concept of, III, 70.
- Atresia**, anal and rectal, III, 243.
- aortic**. See under **Aorta**.  
 bursting of avian follicles at beginning of, III, 600.
- Atriplicism**, due to *Atriplex serrata* ingestion, III, 53.
- Atropine**, determination of, colorimetrically, II, 292.  
 tolerance to, relation of age to, in rats, III, 712.
- Atropine-esterase**. See under **Esterase**.
- Atropisomeric compounds**, II, 195.
- Audiograms**, tonal dips in, III, 592.
- Audiometer**, development of, III, 520.  
 evaluation of, in hearing tests, III, 683.
- Audition**, fatigue in, III, 227.  
 See also **Ears and Hearing**.
- Auditory cortex**. See under **Cerebrum**.
- Auer's bodies**, in aleukæmic reticulo-endotheliosis, III, 872.
- Augelite**, of California, crystal structure of, I, 122.
- Augites**, extinction angles in, I, 411.
- Auramine**, staining of bacteria with, III, 851.
- Aurantine**, II, 431.
- Aurora**, display of, on 18th Sept. 1941, I, 129.  
 nitrogen in, at low latitudes, I, 285.  
 spectra of, I, 190, 285.
- Aurosol**, preparation of, with arabinose as reducing agent, I, 361.
- Austenite**, position of carbon atoms in, I, 136.
- Austroiceles cruciata*, eggs of, development of, effect of temperatures on, III, 748.  
 effect of water on, and their ability to survive desiccation, III, 748.
- Autofunduscopy**, III, 223.
- Autohaemagglutination**, calcium in, III, 290.
- Autolysis**, oxidation, reduction, and thiols in, III, 716.
- Autoretinovasoscopy**. See **Autofunduscopy**.
- Autosorption**, at liquid-vapour boundaries, I, 202.
- Auxins**, determination of, in plants, III, 359.  
 effect of, on protoplasmic streaming, III, 861.  
 in coleptiles, III, 277.  
 in marine algae, III, 75.
- Auxo-enoid systems**, II, 258, 310.
- Avena*, coleoptiles, light-stability of auxin in, III, 425.
- Avena sativa*, araban and lichenin in, III, 501.
- Aviation**, deafness in, III, 592.  
 effect of, on cars, III, 226, 303.  
 on ear and nose, III, 591.  
 medicine in, III, 102.  
 bibliography of, III, 952.  
 selection of pilots for, III, 806.
- Avidin**, crystalline, III, 621.  
 distribution of, in hen's eggs, III, 621.  
 stability of, III, 762.  
 use of, to measure biotin requirement, III, 718.
- Avitaminosis**, in Trinidadians, III, 760.
- Avitaminosis-A**, detection of, by conjunctiva examination, III, 676.
- Avitaminosis-B<sub>1</sub>**, enzyme metabolism of rats during, III, 154.  
 intestines in, III, 909.
- Avitaminosis-E**, tocopherol test for, III, 764.
- Avitaminosis-K**, hypoprothrombinæmia in relation to, in man, III, 194.
- Avitellina lahorea*, proglottides in, sympathetic innervation of, III, 448.
- Axolotls**, effect on, of placental extracts, III, 117.  
 Mauthner cells in, origin of, III, 866.
- Azololl mexicanum*, cutaneous respiration in, effect of melanotic pigmentation on intensity of, III, 879.
- Axons**, giant, squid, membrane potentials from, III, 715.
- 1-Aza-3-4-benzpyrene**, derivatives of, II, 271.
- 8-Azaretene**, synthesis of, II, 417.
- $\gamma$ -Azatrimethin-[2-(3-ethylidihydrobenzthiazole)]-[3-(2:4-benzthiazine)], II, 182.
- Azeotropic mixtures**, entropy increase in formation of, I, 206.  
 heat capacity of, I, 200.
- Azides**, ions, overvoltage of, I, 268.  
 structure of, I, 354.
- Azobenzene**, chloro- and nitro-amino-derivatives, II, 192.  
 4:4'-dicyano-, II, 173.
- Azobenzene-4-carboxylic acid**, oestron ester, II, 58.  
 sugar esters of, II, 396.
- Azobenzene-4:4'-disulphonamide**, reduction of, by animal tissues, III, 46.
- 1:1'-Azobenzene-3':5''-disulphonic acid**, 2-hydroxy-, benzoyl derivative, sodium salt, II, 196.
- Azochloroamide**, bacteriostatic activity of, and sulphanilamide, on streptococcus A and enterococcus, III, 48.  
 synergistic action of, on pathogenic microorganisms, III, 626.
- Azo-compounds**, and their intermediates, II, 356.  
 spectra of, absorption, I, 225.  
 in liquid ammonia and liquid sulphur dioxide, I, 82.
- Azo-dyes**, II, 356.  
 constitution and absorption spectra of, II, 8.  
 subcutaneous sarcoma produced by, III, 696.
- Azo-dyes**, amino-, phototropic, II, 192.
- Azo-groups**, as chelating group, II, 88.
- Azoimide**, reaction of, with phthalic anhydride in presence of sulphuric acid, II, 360.  
 spectrum of, absorption, ultra-violet, I, 351.
- Azolesterase**, activity of, in serum-proteins, III, 847.  
 hydrolysis by, III, 554.
- Azomethane**, photolysis of, I, 109, 209.
- Azomethine groups**, physico-chemical properties of, I, 164.
- Azomethinevinylene groups**, physico-chemical properties of, I, 164.
- 1:1'-Azonaphthalene**, 4:4'-dichloro-, II, 140.
- 1:1'-Azonaphthalene-3''-sulphonic acid**, 2-hydroxy-, benzyl derivative, salts, II, 196.
- Azotæma**, alimentary, and bleeding peptic ulcer syndrome, III, 241.
- Azotobacter*, hydrogenase in, III, 780.  
 nitrogen fixation by, dissociation constant of, III, 780.
- Azotobacter chroococcum*, synthesis of co-enzyme R by, III, 345.
- Azotobacter vinelandii*, cell-free enzymes of, III, 939.  
 nitrogen isotopes distributed in, III, 644.
- Azotometer**, mercury, for nitrogen determination, II, 339.
- Azoxyanisole**, crystal structure of, I, 291.  
 liquid crystalline and isotropic states of, I, 356.
- Azulene**, colour and constitution of, II, 191.
- Azulenene**, II, 417.
- Azurite**, heat of formation of, I, 367.
- Azygos veins**. See under **Veins**.
- Azylase**, III, 555.

**Bacilli**, aberrant coliform, III, 645.  
 acid-fast, detection of, in body fluids after trypsin digestion, III, 779.  
 acidophilic, biological properties of, III, 269.  
 acne, culture of, in penicillin broth, III, 940.  
 anthrax, *P* substance from, fate of, in the organism, III, 269.  
 Calmette-Guerin, vaccination by, tuberculin reactivity after, III, 68.  
 coliform, in lakes and streams, III, 269.  
 tests for, container and gas-tube sizes used in, III, 270.  
 colon-typoid, detection of, sugar medium for, III, 346.  
 differentiation of, by lead reaction, III, 646.  
 glucose fermentation by, in presence of nicotinic acid, III, 66.  
 diphtheria, carrier rate for, in natives, III, 347.  
 culture media for, III, 719.  
 in New York in 1940, II, 346.  
 resistance to, in rats, III, 65.  
 toxin production by, effect of metals on, III, 271.  
 dysentery, Flexner, isolation of, from faeces, SS agar medium for, III, 781.  
 toxins of, III, 781.  
 enteric, action on, of eosin-methylene blue agar, III, 492.  
 gas gangrene, fibrinolytic action of, III, 64.  
 gram-negative sporulating, bacteræmia produced by, III, 346.  
 infections by, chemotherapy of, II, 51, 208.  
 intestinal, diagnosis of, III, 492.  
 effect on, of galacturonic acid and pectin, III, 852.  
 leprosy, fluorescence microscopy of, III, 853.  
 separation of, from leprosy tissue, III, 853.  
 Morax-Axenfeld. See *Bacillus lacunatus*.  
 Schmitz, ectotoxin from, III, 272.  
 tetanus, folic acid as growth essential for, III, 648.  
 growth of, effect on, of vitamin-C, III, 854.  
 tubercle, antigens from, detection of, III, 855.  
 avian, III, 177.  
 virulence of, effect of bile on, III, 177.  
 demonstration of, III, 351.  
 effect of inoculation with anthracite dust mixed with, III, 262.  
 effect of paraffin hydrocarbons on allergy and immunity produced by, III, 649.  
 fluorescence staining of, III, 495.  
 human, acetyl-polysaccharides of, III, 273.  
 chromogenic, III, 855.  
 preservation of, III, 495.  
 spread of, in tuberculosis, III, 67.  
 sputum film cultures of, III, 351.  
 See also *Bacteria*.  
*Bacillus anthracis*, spores, longevity of, III, 422.  
*Bacillus cereus*, respiration of, III, 62.  
*Bacillus coli*, and its bacteriophage, effect on, of sulphanilamide and sulphapyridine, III, 47.  
 cultures of, from Singapore water, III, 422.  
 potential of metallic electrodes in, III, 557.  
 detection of, in water, III, 346.  
 growth of, effect of acids on, III, 940.  
 effect of  $\beta$ -1-naphthylacrylic acid on, III, 940.  
 indole formation by, inhibition of, III, 646.  
 use of, in determination of vitamin-C, III, 329.  
*Bacillus coli commune*, indole formation by, III, 646.  
*Bacillus coli mutabile*, papillary variation in, III, 422.  
*Bacillus diphtheriae*, infections by, treatment of, with sulphonamides in guinea-pigs, III, 545.  
*Bacillus dysenteriae*, antigens of, III, 940.  
 cultivation of, from blood of patients, III, 65.  
 medium for, III, 646.  
 degradation of antigenic material from, III, 271.  
 strains of, III, 271.  
*Bacillus friedländer*, antibody recovery from, III, 781.  
 incidence of, pneumonia from, III, 347.  
 response of, to sulphonamides, III, 543.  
*Bacillus lacunatus*, biological properties of, III, 558.  
*Bacillus mizerans*, amylase of, III, 848.

*Bacillus prodigiosus*, effect of *d*-xylose on gaseous exchange by, III, 854.  
*Bacillus proteus*, flagellate and non-flagellate, oxidation and reduction by, III, 558.  
*Bacillus radiobacter*, physiology of, and of crown galls, III, 939.  
*Bacillus tuberculosis humanus*, cultures, effect of hormones on, III, 942.  
*Bacillus typhosus*, infections by, treatment of, with sulphonamides, III, 546.  
 vi-agglutination of, III, 351.  
 Bacteræmia, produced by aerobic Gram-negative sporulating bacilli, III, 346.  
*Bacteria*, acetic, III, 421, 645.  
 acid-fast, in tonsillar tissue of pigs, III, 346.  
 staining of, with auramino and carbolfuchsin, III, 851.  
 action of detergents on, inhibited by phospholipins, III, 850.  
 action of high-frequency sound waves on, III, 639.  
 aerobic spore-forming, toxic substance from, inhibiting micro-organisms, III, 643.  
 air-borne, in operating rooms, III, 718.  
 ammonia formation by, III, 782.  
 anaerobic, flagella staining of, III, 366.  
 metabolism of, III, 780.  
 sporulating, isolation of, composition tubes for, III, 345.  
 autotrophic, endogenous respiration in, III, 492.  
 butyric-butyl alcohol, nutrition of, III, 63.  
 capsule formation by, III, 558.  
 cellulose-decomposing, III, 851.  
 chemotaxis of, III, 492.  
 collecting of, from air, III, 268.  
 collecting and counting of, slit sampler for, III, 268.  
 counting of, III, 269.  
 by plating method, III, 345.  
 cultures of, detection in, of acetylmethylcarbinol, III, 422.  
 exposure of, in Petri dishes, III, 939.  
 in synthetic soil, III, 268.  
 media for, III, 779.  
 cytology of, III, 84.  
 dehydrogenase of, III, 58.  
 destruction of, by germicides, III, 939.  
 by ultra-violet light, III, 851.  
 effect on, of vitamin-A deficiency in rats, III, 538.  
 electron microscopy of, III, 851.  
 encapsulated, electron microscopy of, III, 268, 644.  
 fermentation by, III, 851.  
 of sugar acids, III, 345.  
 potassium concentration in, III, 852.  
 filtrates of, effect of, injected into femoral artery and heart, III, 493.  
 flagella of, origin and width of, III, 644.  
 flora of, in marine mud flats, III, 643.  
 in skin, in relation to acid-base equilibrium, III, 269.  
 fresh water, III, 269.  
 growth factors for, III, 60, 269.  
 growth of, effect of *p*-aminobenzoic acid on, III, 646.  
 inhibition of, by acriflavine, III, 344.  
 by 2-aminofluorene, III, 643.  
 by indolylacrylic acid, III, 344.  
 by metabolite analogues, III, 778, 779.  
 inhibitors of, and their reactions with constituents of media, III, 779.  
 limiting factors for, III, 63.  
 heterotrophic, assimilation by, of heavy carbon dioxide, III, 492.  
 homogenising of, grinder for, III, 718.  
 hydrocyanic acid formation by, III, 169.  
 $pH$  on surface of, III, 851.  
 in English lakes, III, 63.  
 infections by, chemotherapy of, II, 375.  
 lactate oxidation by, effect of surface-active agents on, III, 941.  
 lactic, eluate factor required by, III, 269.  
 glycolysis by, effect on, of sulphonamido-tetrazolium salts, II, 289.  
 growth factors for, III, 780.  
 lactic and propionic, growth factors for, III, 60.

*Bacteria*, life and death of, III, 60.  
 luminescence of, inhibition of, by sulphonamides, III, 545.  
 lysis of, by menthol, III, 939.  
 metabolism of, effect on, of sulphanilamide, III, 851.  
 nitrogen-fixing, reductase in, III, 62.  
 nodule, oxidation of glucose by, III, 851.  
 symbiosis of, with leguminous plants, III, 654.  
 nuclear apparatus of, III, 352.  
 nutrition of, and chemotherapy, III, 938.  
 oxidation by, in relation to vitamin-B<sub>1</sub>, III, 645.  
 of amines, III, 644.  
 plate count of, III, 851.  
 polysaccharides of, enzymic production of, III, 718.  
 pyrogen production by, III, 643.  
 reduction by, of tetrathionates, III, 783.  
 respiration of, action of sulphonamides on, III, 850.  
 soil. See under Soils.  
 suspensions, production of, III, 851.  
 See also *Bacilli*.  
**Bactericides**, III, 779.  
 albucid, III, 706.  
 aliphatic bases, III, 850.  
 antitoxin, III, 628.  
 blood-serum, III, 838.  
 copper, III, 167.  
 detergents, III, 939.  
 diethylstilbestrol, III, 891.  
 evaluation of, by egg injection, III, 492.  
 from moulds, III, 60, 174, 266, 267, 420, 490.  
 from saprophytic micro-organisms, III, 344.  
 from soil bacteria, III, 939.  
 glucose-sulphapyridine, III, 159.  
 gramicidin, III, 163, 546, 839.  
 heparin, III, 663.  
 M. & B. 693, III, 410.  
 mandelic acid, III, 545.  
 methionine, III, 477.  
*N*'-methylsulphathiazole, III, 840.  
 neosalvarsan, III, 770.  
 novoxil, III, 546.  
 penicillin, III, 916.  
 promin, III, 919.  
 prontosil, III, 545.  
 serum, III, 47, 335, 544, 769.  
 silver oxide, III, 546.  
 sodium sulphacetamide, III, 767.  
 sodium sulphapyrimidine, III, 626.  
 streptothricin, III, 629.  
 sulphacetamide, III, 162.  
 sulphaguanidine, III, 706, 839, 919, 920.  
 sulphamethylthiazole, III, 480, 706.  
 sulphanilamide, II, 221; III, 47, 161, 335, 409, 411, 478, 544, 545, 627, 628, 768, 918, 919.  
 2-*N*'-sulphanilamido-5-ethylthiazole, III, 840.  
 2-sulphanilamidopyrazine, III, 47.  
 sulphanilylbenzamide, III, 259.  
 sulphanilylguanidine, III, 706.  
 sulphapyridine, III, 47, 160, 161, 259, 335, 410, 478, 544, 545, 626, 627, 628, 705, 706, 767, 839.  
 sulphapyrimidine, III, 48, 410, 477, 478, 544, 628, 705, 839, 920.  
 sulphathiazole, III, 161, 259, 336, 410, 411, 478, 544, 545, 706, 768, 838, 839, 840, 917.  
 sulphonamides, III, 47, 159, 160, 161, 259, 335, 410, 411, 477, 544, 545, 663, 705, 707, 767, 768, 838, 839, 918.  
 surface behaviour of, III, 639.  
**Bacteriology**, air analysis in, III, 345.  
 use of thioglycollate medium in, III, 644.  
**Bacteriophage**, action of stains on, III, 943.  
 drying and freezing of, III, 352.  
 effect of X-rays on, III, 855.  
 identification of, with electron microscope, III, 649.  
 infectivity of, III, 855.  
 origin of, for lactic streptococci, III, 349.  
 shaking of, III, 649.  
 treatment with, III, 560.  
**Bacteriophage B**, streptococcus, potency of, III, 422.



- Bacteriostatic substances**, formation of, by fungi, III, 937.
- Bacterium aliphaticum*, oxidation by, of hydrocarbons, III, 718.
- Bacterium granulosis*. See *Noguchia granulosis*.
- Bacterium paratyphosum*, isolation of, from faeces, III, 853.
- Bacterium paratyphosum C*, anaerogenic strain of, III, 272.
- Bacterium tularense*, infection of chick embryos with, III, 346.
- Bacterium typhosum*, antigenic fractions from, preparation and testing of, III, 855.
- O antigenic complex of, III, 942.
- Bacteroides funduliformis*, L type growth from, III, 63.
- Bacteroides vulgatus*, growth and oxygen consumption of, III, 63.
- Baicalin, 6:7-diacetate, II, 149.
- Bakers, flour allergy and hypersensitivity to ammonium persulphate in, III, 71.
- Balances, automatic, recording, I, 187.
- film, use of, in biological and food analyses, III, 655.
- Baldness, hereditary, in fowls, III, 81.
- See also Alopecia.
- Ballistocardiograph, origin of, III, 97.
- use of, III, 97.
- Balloons, rubber, inflated, crystallisation in, I, 198.
- lecture experiments using, I, 215.
- Balsam, Canada. See Canada balsam.
- Bananas, carbohydrate metabolism of, in ripening and storage, III, 653.
- Banti's syndrome, pregnancy and, III, 191.
- Barbitone, spectrum of, absorption, ultra-violet, II, 32.
- Barbiturates, III, 472.
- action of, effect of vitamin-C deficiency on, III, 550.
- on isolated intestines, III, 925.
- intravenous use of, in labour, III, 549.
- poisoning by. See under Poisoning.
- use of, in surgery, III, 649.
- Barbituric acid, derivatives, anaesthetic activity of. See under Anaesthetics.
- determination of, III, 788.
- effect of, on lobeline circulation time, III, 550.
- hydrocyanic compounds in organs after death from, III, 46.
- spectra of, absorption, ultra-violet, II, 32.
- reaction of, with 5:5-dibromo-4-hydroxy-hydrouracil, II, 32.
- salts, analysis of, in presence of sulphonamides, II, 44.
- Barbituric acids, preparation of, II, 150.
- with large radicals, II, 151.
- Barbiturism, experimental, chronic, III, 166.
- Barium, adsorption, evaporation, and migration of, on molybdenum and tungsten, I, 355.
- isotopes, radioactive, from caesium, I, 35.
- photo-effect of, I, 349.
- Barium compounds, test meals of, gastro-intestinal response to, in children, III, 816, 817.
- Barium salts, co-precipitation of radium salts and, I, 274.
- Barium bismuth oxybromide and oxychloride, crystal structure of, I, 291.
- carbonate, thermal dissociation of, I, 334.
- chloride, viscosity of solutions of the sodium salt and, I, 52.
- perchlorate, preparation of, electrolytically, I, 333.
- sulphate, co-precipitation of fourth-period elements with, I, 154.
- formation of colloidal sols of, I, 290.
- suspensions, for use with X-rays, III, 487.
- sulphide, I, 340, 359.
- Barley, carboxylase and cocarboxylase in, III, 359.
- ear shading and defoliation in, III, 948.
- glycolysis in, III, 358.
- scabbed, emetic principle from, III, 951.
- solution of nitrogenous constituents of, in sodium salicylate, III, 562.
- Barley plants, ascorbic acid in, III, 424.
- growth of, carbohydrate changes in, III, 562.
- roots, effect of calcium, magnesium, and strontium ions on ion accumulation in, III, 721.
- Bart reaction, diazonium borofluorides in, II, 336.
- Bartonella bacilliformis*, agglutinins for, III, 645.
- growth of, media for, III, 63.
- Bartonella muris*, preservation of, frozen, III, 645.
- Bartonellosis, plasma-fatty acids and -cholesterol during, in dogs, III, 665.
- Barytes, deposits of, in Nova Scotia, I, 122.
- spectrum of, Raman, I, 42.
- Barytron, secondaries produced by, I, 191.
- Bases, aliphatic, long-chain, antibacterial action and constitution of, III, 850.
- classification of, in organic analysis, II, 339.
- exchange and transfer equilibria of acids, salts, and, in deuterium oxide-water mixtures, I, 144.
- organic, II, 297.
- identification of, with 2-nitroindane-1:3-dione, II, 248.
- proton transfer concept of acids and, I, 205.
- strong, velocity of electrophoresis of, I, 331.
- weak, determination of, in glacial acetic acid solution, volumetrically, I, 338.
- Base-exchange reactions, ionic competition in, I, 297.
- Base-exchange substances, I, 110.
- spectra of, infra-red, I, 124.
- synthetic resin, adsorption isotherms of, I, 141.
- Basicity, detection of, in slightly-soluble materials, I, 276.
- Bats, flying, sensory basis of obstacle avoidance by, III, 807.
- Jamaican. See *Artibeus jamaicensis parvipes*.
- Batteries, storage, production of, risk of lead poisoning in, III, 55.
- See also Accumulators.
- Batyl alcohol, II, 129.
- from bone marrow, III, 85.
- Bauhinia candicans*, extracts of, effect of, on blood-sugar and diabetes in dogs, III, 164.
- Bayer 205, biological standardisation of, III, 629.
- Bean plants, broad, roots, effect on, of ionising rays, III, 553.
- constituents of, effect on, of naphthylacetic acid and its amide, III, 424.
- nodules and roots of, assay of, III, 424.
- snap, black-root disease of, III, 786.
- Bears. See *Ursus arctos*.
- Beattie-Bridgeman constants, determination of, I, 89.
- Bechuana, blood chemistry of, III, 198.
- Bed coverings, special, against allergy, III, 561.
- treatment of, with dust-laying oils, III, 421.
- Bees, honey. See *Apis mellifica*.
- royal jelly of, pantothenic acid content of, III, 472.
- Beech wood, red, hydrolysis of, polysaccharides from, II, 352.
- tar from. See under Tar.
- Beef, desiccated, as food for premature and full-term infants, III, 38.
- iron in, effect of heat on availability of, III, 760.
- ripening of, from grass-fattened and grain-fattened steers, III, 618.
- Beetles, death-watch, development and growth of, on decayed wood, III, 425.
- flour, population growth of, III, 533.
- See also *Tribolium confusum*.
- hypersensitivity to, III, 71.
- Beetroot, seeds, germination of, III, 948.
- seed balls of, germination tests with, III, 358.
- Behenic acid,  $\mu$ -dihydroxy-, methyl ester, II, 347.
- Beidellite membranes. See under Membranes.
- Belladonna, assays of, biological and chemical, III, 261.
- Bulgarian and U.S.P., treatment with, of Parkinsonism, III, 212.
- treatment with, of Parkinsonism, III, 883.
- white wine extract of, treatment with, of Parkinsonism, III, 213.
- Bentonite, sols, depolarisation of Tyndall-scattered light of, I, 172.
- electrochemical properties of, I, 57.
- Benz-N-acet-m-toluidide, 2:4-dinitro-, II, 362.
- Benzaldazine, 4:4'-dicyano-, II, 313.
- Benzaldehyde, autooxidation of, in presence of didiphenylene-ethylene, II, 54.
- catalytic hydrogenation of, II, 309.
- determination of, II, 244.
- dimethylthiosemicarbazone hydriodides, II, 190.
- $\delta$ -p-nitrophenyl semicarbazone, II, 169.
- Benzaldehyde, m-bromo-, and o-, m-, and p-chloro-, condensation of, with malonic acid, II, 97.
- o-hydroxy-, derivatives, condensations of, with acetophenone, II, 18.
- p-hydroxy-, detection of, colorimetrically, II, 143.
- o-nitro-, condensation of, with amides, II, 197.
- m-nitro-,  $\delta$ -p-nitrophenylsemicarbazone, II, 169.
- o-, m-, and p-nitro-, condensation of, with malonic acid in presence of organic bases, II, 256.
- m- and p-mono- and 2:4-di-nitro-, condensation of, with amides, II, 313.
- 2:4-dinitro-, condensation of, with malonic acid, II, 256.
- $\epsilon$ -Benzamidohexic acid,  $\alpha$ -bromo-, ethyl ester, II, 4.
- Benzanilide, 4:4'-dicyano-, II, 174.
- 1:2-Benzanthracene, 2'-hydroxy-, and its acetate, II, 262.
- 1:2-Benzanthracene-2'-sulphonic acid, II, 262.
- 1:2-Benzanthraquinone, 2'-hydroxy-, and its acetate, II, 262.
- 1:2-Benzanthraquinone-2'-sulphonic acid, II, 262.
- meso-Benzanthrone, 9-amino-, and its acetyl derivative, II, 198.
- meso-Benzanthronecarboxylic acids, and their esters, II, 198.
- 1:2-Benzanthryl-1'-acetic acid, II, 8.
- Benzaurin dyes, tautomeric forms of, I, 194.
- tautomerism of phthalein dyes and, I, 194.
- Benzazide, molecular re-arrangement of, induced by ultrasonic waves, I, 180.
- Benzazide, 3:5-dinitro-, use of, in preparation of tocopherols, II, 234.
- Benzdehydro-1:3-dioxan, 6:8-dichloro-, II, 112.
- Benzdehydro-1:3-dioxan-4-one, 6:8-dichloro-, II, 112.
- Benzdi-p-aminodiphenylamide, II, 174.
- Benzdi-4-cyanophenylamide, II, 174.
- Benzedrine, poisoning by. See under Poisoning.
- sulphate, antagonism of ethyl alcohol to, in rabbits, III, 336.
- effect of, on gastro-intestinal motility, III, 30.
- treatment with, of alcoholism, III, 517.
- of encephalitis lethargica, III, 377.
- d-, dl-, and l-Benzedrine sulphates, stimulation by, of central nervous system, III, 167.
- Benzene, alkylation of, with acid catalysts, II, 304.
- condensation of, with secondary aliphatic alcohols, in presence of aluminium chloride, II, 401.
- decomposition of, photochemical, I, 109.
- derivatives, monoalkyl, Raman spectra of, I, 258.
- polysubstituted, absorption spectra of, I, 193.
- determination of, in presence of cyclohexane, II, 388.
- effect of, and its derivatives, on pupil, III, 742.
- on Valonia, III, 54.
- electrophilic substitution of, and its derivatives, I, 148.
- equilibrium of, with ethyl alcohol and glycerol in boiling solution, I, 329.
- with ethyl alcohol and water, I, 240.
- fluorination of, II, 84.
- formulae for, II, 136.
- leucotoxic action of, effect of sulphapyridine on, III, 838.
- mercury-photosensitised reactions of hydrogen and, I, 109.

**Benzene**, nucleus, substitution in, II, 220.  
 X-ray study of, and its mixtures with *cyclohexane*, I, 259, 263.  
 solid, solubility of, in non-polar liquids, I, 54.  
 solubility of mixtures of pyridine, water, and, I, 267.  
 spectrum of, absorption, and of butadiene and hexatriene, I, 134.  
 spreading pressure of, I, 236.  
**Benzene**, bromo-, surface activity of alcohols in, I, 202.  
 chloro-, equilibrium of, in mixtures with aniline, I, 145.  
 relaxation times in mixtures of benzene and, I, 168.  
 spectrum of, absorption, near ultra-violet, I, 81.  
 vapour pressure of mixtures of  $\alpha$ -nitropropane and, I, 24.  
*mono-* and *di-chloro-*, spectra of, Raman, I, 7.  
 chlorodinitro-derivatives, preparation of, from dinitroanilines, II, 137.  
 halogeno-derivatives, dipole moments of, I, 353.  
 dihydroxy-derivatives, adsorption of, by sugar charcoal, I, 235.  
 pentahydroxy-, derivatives, II, 10.  
 nitro-, aromatisation of diene reactions in, II, 172.  
 diazotisation of, II, 170.  
 effect of, on *Valonia*, III, 54.  
 effect of flow on, I, 233.  
 reduction of, in presence of cadmium-copper alloy, I, 333.  
 relaxation times in mixtures of benzene and, I, 168.  
*p*-dinitro-, equilibrium of, with  $\alpha$ -naphthylamine, I, 398.  
 nitroso-, compound of, with haemoglobin, II, 42.  
 spectrum of, absorption, I, 39.  
 substituted-derivatives, spectra of, absorption, I, 39.  
*o*-dinitroso-derivatives, structure of, II, 380.  
**Benzeneazacetaldoxime**, cobaltic complex, II, 88.  
**Benzeneazo-2:6-diaminopyrimidine**  $\star$ hydrochloride. See *Pyridium*.  
**Benzeneazoanisaldoxime**, cobaltic complex, II, 88.  
**4-(Benzeneazo)azobenzene-4':4''-disulphonic acid**, and its salts, II, 356.  
**4-(Benzeneazo)azobenzenetetrasulphonic acid**, II, 356.  
**Benzeneazobenzaldoxime**, cobaltic complex, II, 88.  
**2-Benzeneazo-6-ethoxyepidine**, II, 288.  
**1-Benzeneazo-2-hydroxynaphthoic acids**, II, 226.  
**4-Benzeneazoinadazole**, 5-amino-, II, 273.  
**2-Benzeneazo-6-methoxyepidine**, II, 288.  
**4-Benzeneazo-6- and -8-methoxyquinadines**, II, 287.  
**5-Benzeneazo-4-methylcoumarin**, 6-hydroxy-, II, 202.  
**4-Benzeneazo-1- and -2-methylindazoles**, 5-amino-, II, 273.  
**1-Benzeneazonaphthalene**, 2-bromo-1-*m-mono-* and -1-2':5'-*di-chloro-*, II, 308.  
**Benzeneazo- $\beta$ -naphthyl acetate**, and *p*-bromo-, 4-bromo-2- and -3-nitro-, *p*-chloro-, 4-chloro-2-nitro-, *p*-fluoro-, *m*-nitro-, and 3:5-dinitro-2-hydroxy-, II, 139.  
**1-Benzeneazo-2-naphthyl chloroacetate**, and 1-*p*-nitro-, and their pyridinium salts, and nicotinate, II, 356.  
**Benzeneazo- $\beta$ -naphthylamine**, bromonitro-derivatives, *m-mono-* and 2:5-*di-chloro-*, 4-chloro-2-nitro-, *m-* and *p*-fluoro-, *p*-iodo-, and 3:5-dinitro-2-hydroxy-, II, 139.  
**4-Benzeneazophenol**, 3-bromo-, and 3-iodo-, II, 308.  
 3-fluoro-, and fluoronitro-derivatives, II, 9.  
 3-halogeno-derivatives, chromoisomerism of, II, 308.  
**Benzeneazopiperonaldoxime**, and its cobaltic complex, II, 88.  
**Benzeneazo-*p*-tolualdoxime**, and its cobaltic complex, II, 88.

**Benzenediazonium chloride**, thermal decomposition of, in various solvents, I, 147.  
 salts, preparation of, II, 222.  
**Benzene-2:5-disulphonanilide**, chloro-, II, 170.  
**Benzenesulphenamide**, *p*-nitro-, II, 222.  
**Benzenesulphonic acid**, and its derivatives, II, 355.  
**Benzenesulphonic acid**, *p*-nitro-, esters, II, 222.  
**Benzenesulphonamide**, *p*-amino-, mercuric derivatives, II, 400.  
 See also *Prontosil* and *Sulphanilamide*.  
*p*-nitro-, reduction of, by animal tissues, III, 46.  
 $\omega$ -Benzenesulphonamidacetate-1- and -2-naphthones, II, 57.  
**2-Benzenesulphonamido-5-butyl-4-thiazolone**, 2-*p*-nitro-, II, 120.  
**2-(Benzenesulphonamido)-4:6-dimethylpyrimidine**, *p*-amino-, See *Sulphamethazine*.  
**4'-(Benzenesulphonamido)diphenyl sulphide**, 4-nitro-, II, 222.  
**4-Benzenesulphonamido-2-ethoxypyrimidine**, 4-*p*-nitro-, II, 152.  
**2-Benzenesulphonamido-5-ethyl-4-thiazolone**, 2-*p*-nitro-, II, 120.  
**2-Benzenesulphonamidothiazolones**, 2-*p*-amino-, and their acetyl derivatives, and 2-*p*-nitro-, II, 209.  
**Benzenesulphonanilide**, 4:4'-*dicyano-*, II, 174.  
**Benzenesulphonic acid**,  $\beta$ -chloroethyl ester, II, 294.  
 phenylhydrazine salt, II, 215.  
**Benzenesulphonic acid**, 3:5-dinitro-, sodium salt, II, 258.  
**Benzenesulphonic acids**, fusion of, with alkalis, II, 254.  
**Benzenesulphonic acids**, amino-, derivatives, bromination of, II, 400.  
**2-Benzenesulphonmethylamidothiazole**, 2-*p*-amino-, II, 209.  
**Benzenesulphon-*p*'-nitroanilide**, *p*-nitro-, II, 222.  
**Benzenesulphonyl chloride**, reaction of, with  $\beta$ -benzil oxime, II, 100.  
**Benzene-4-sulphonyl chloride**, 1:2-dihydroxy-, diacetyl derivative, II, 140.  
**Benzenesulphonylacetylilmide**, *p*-amino-. See *Sulphacetilmide*.  
**Benzenesulphonylglycine**, 3:5-dinitro-, II, 258.  
**Benzenesulphonylhydrazine**,  $\beta$ -*p*-amino-, and its derivatives, II, 146.  
**5:6-Benzfluoranthene**, and 4:11-dibromo-, II, 192.  
**Benzfurans** in beechwood tar, II, 374.  
**Benzfuran-4-carboxylic acid**, 3-hydroxy-, and its derivatives, II, 112.  
**Benzfuran-1:2-dicarboxylic acid**, and its diethyl ester and hydrazides, II, 119.  
**Benzfuran-1:2-dicarboxylic acid**, 4-amino-, and 4-nitro-, and their derivatives, II, 178.  
**Benzhomoveratrylamide**, *o*-nitro-, II, 115.  
*p*-nitro-, II, 375.  
**Benzhydrol**, 4:4'-*dicyano-*, II, 173.  
**Benzhydramine**, 4:4'-dibromo-, and its hydrochloride, II, 253.  
 $\beta$ -(Benzhydrylthiol)propionic acid, II, 172.  
**Benzidine**, blood test with, in faeces, III, 243.  
**Benzidine rearrangement**, II, 280.  
**Benzil**, ammonolysis of, by liquid ammonia, II, 204.  
 crystal structure of, I, 87.  
 $\beta$ -Benzil, oxime, reaction of, with benzenesulphonyl chloride, II, 100.  
**Benzilamide**, II, 329.  
**Benzilic acid**, esters, mydriatic, II, 224.  
**Benziminazoles**, II, 63.  
**Benziminazole-2-acetone**, II, 238.  
**Benzochromenium series**, dehydrenium salts of, II, 421.  
**5:6-Benzocinchoninic acid**, and its derivatives, II, 271.  
**N-5:6-Benzocinchoninoyl-N'-diethylamino-benzylidenehydrazide**, II, 271.  
**Benzocyclooctatetraenes**, II, 148.  
**5:6-Benzodehydro-1:3-dioxan-2:4-dione**, II, 376.  
**5:6-Benzo-1:3-dioxan-2:4-dione**, II, 376.  
**5:6-Benzoflavanone**, II, 21.  
**Benzoic acid**, acid strength of, effect of substituents on, I, 205.

**Benzoic acid**, association of, in benzene, I, 99.  
 compounds of, with *m*-phenylenediamine and salicylic acid, I, 52.  
 distribution of, between benzene and water, I, 235, 395.  
 esterification of, vapour-phase, I, 150.  
 ionisation constant of, in methanol-water mixtures, I, 297.  
 oxidation of, by mycobacteria, III, 648.  
**Benzoic acid**, sodium salt, effect of, on hippuric acid synthesis in liver, III, 896.  
 growth-inhibition produced in rats by, III, 327.  
**Benzoic acid**, benzyl ester, treatment with, of scabies, III, 411.  
**Benzoic acid**, *m*-amino-, methyl ester, hydrochloride, II, 360.  
*m-* and *p*-amino-, electrical conductivity of solutions of, I, 64.  
*p*-amino-, acetylation of, III, 258.  
 acidity of, I, 205.  
 effect of, in diet, III, 155.  
 in lactation, III, 701.  
 on bacterial growth, III, 646, 779.  
 on greying of fur, III, 40.  
 in vitamin-B-complex studies with mice, III, 472.  
 inhibition by, of antimalarial action of sulphonamides, III, 838.  
 protection by, against growth inhibition by sulphanilamide, III, 949.  
 toxicity of, III, 636.  
*p*- $\omega$ -*p'*-diamino-, *p*-benzoyl derivative, and *p'*-nitro-*p*- $\omega$ -*p'*-diamino-, *p*-benzoyl derivative, methyl esters, II, 363.  
 5-bromo-2-amino-, use of, in analysis, I, 409.  
 3:5-dibromo-4-amino-, esters and their salts, II, 360.  
*m*-hydroxy-, preparation of, II, 404.  
 2:3:5-triiodo-, effect of, and its derivatives, on tubercle bacillus growth, III, 49.  
*o*-iodoso-, as reagent for cysteine, glutathione, etc., II, 44.  
*m*-nitro-, trypanocidal action of, and its derivatives, III, 48.  
*p*-nitro-, bacteriostatic effect of, III, 46, 939.  
 bornyl ester, II, 369.  
 phenyl ester, colour of, II, 258.  
*p*-nitro-, and 3:5-dinitro-, phenyl and substituted phenyl esters, II, 258.  
 3:5-dinitro-, methylaminoethyl ester, II, 210.  
 phenyl ester, colour of, II, 253.  
 preparation of, II, 258.  
 nitro-derivatives, crystal structures of, I, 46.  
 isomeric, reduction of, by rats, III, 46.  
*mono-* and *di*-nitro-derivatives, bornyl esters, physical constants of, II, 201.  
*o*-3':5'-dinitrohydroxy-, *o*-benzoyl derivative, methyl ester, II, 258.  
*p*-substituted-derivatives, ethyl esters, dipole moments of, I, 227.  
*p*-thiol-, preparation and properties of, II, 259.  
**Benzoine**, derivatives, II, 362.  
 mandelohydrazones, isomeric, II, 18.  
 $\alpha$ -Benzoinoxime, determination of copper conductometrically with, I, 278.  
**Benzonitrile**, 2:4:5-trichloro-, II, 99.  
 $\alpha$ -fluoro-, II, 66.  
**Benzophenone**, crystal structure of, I, 87.  
 reaction of, with magnesium methyl bromide, II, 12.  
 reduction of, electrolytically, II, 56.  
 spreading pressure of, I, 236.  
**Benzophenone**, 4:4'-diamino-, and its derivatives, sulphonamide activity of, II, 362.  
 5-chloro-2-amino-4'-hydroxy-, 3-*mono-* and 2:5-*di-chloro*-4'-hydroxy-, and their derivatives, II, 273.  
 4:4'-*dicyano-*, and its phenylhydrazone, II, 173.  
**Benzophenone-2:4-dicarboxylic acid**, and nitro-, and their derivatives, II, 329.  
**Benzophenoxime**, oxidation of, II, 315.  
**Benzo- $\alpha$ -pyrone**, reduction of  $\beta\beta\beta$ -trichloro- $\alpha$ -hydroxyethyl group attached to, II, 108.  
**Benzopyrone group**, constitution and fluorescence of, II, 419.  
**Benzopyrone series**, synthesis in, II, 420.

- Benzopyrylium salts, II, 109.  
 5:6-Benzquinoline, 4- and 8-amino-, and 8-hydroxy-, and their derivatives, II, 271.  
 5:6-Benzquinoline-8-carboxylic acid, and its derivatives, and 7-chloro-, methyl ester, II, 270.  
 Benzoquinone, derivatives, bacteriostatic action of, III, 490.  
 Benzoquinone, 2:3:5:6-tetrabromo-, preparation of, II, 409.  
 2-fluoro-, II, 9.  
 tetrahydroxy-, preparation of, from inositol, II, 176.  
 2-iodo-, II, 262.  
 o-Benzquinonemethide, 3:5-dichloro-, II, 255.  
 Benzoxazoles, reduction of, in liquid ammonia, II, 209.  
 Benzisoxazoles, II, 56, 66.  
 Benzoyl chloride, hydrolysis of, I, 369.  
 chloride, 4-cyano-, II, 174.  
 peroxide, decomposition of, in benzene, I, 370.  
 $\beta$ -Benzoyl- $\alpha$ -p-anisylpropionic acid, II, 97.  
 Benzoylation, with aluminium-aluminium chloride catalyst, II, 260.  
 $\alpha$ -Benzoylbenzhydryl disulphide and thiobenzoate, II, 172.  
 $\alpha$ -Benzoylbenzhydrylthiol, II, 172.  
 $\beta$ -(Benzoylbenzhydrylthiol)propionic acid, II, 172.  
 o-Benzylbenzoic acid, 3:6-o-3':4'-tetrachloro-, II, 177.  
 2':4'-dihydroxy-, II, 198.  
 O-Benzylbenzoylacetate. See  $\beta$ -Phenylacrylic acid,  $\beta$ -hydroxy-,  $\beta$ -benzoyl derivative.  
 4-Benzoyl-2-benzyldecahydroisoquinoline, 10-hydroxy-, II, 270.  
 4-Benzoyl-2-benzyldecahydroisoquinoline, and its derivatives, II, 270.  
 $\alpha$ -Benzoyl-n-butyl acid, n-butyl ester, II, 247.  
 Benzoylcarbinol, p-hydroxy-, 2:4-dinitrophenylhydrazone, II, 18.  
 $\beta$ -Benzoyl-p-chlorophenylpropionic acids, II, 97.  
 2-Benzoyl-1:1-diethoxy-3-phenylcyclobutane, II, 227.  
 3-Benzoyldihydrocoumarin-4-cyanoacetamide, II, 420.  
 1-Benzoyl-1:2-dimethylcyclopentane, and its oxime, II, 143.  
 Benzoylformanilides, reaction of, with Grignard reagents, II, 329.  
 Benzoylformic acid, ethyl ester, 2:4-dinitrophenylhydrazone, II, 77.  
 Benzoylmesitylene, bromo- and chloro-derivatives, II, 101.  
 p-bromo-, and its derivatives, II, 315.  
 1-Benzoyl-2-methyl-1-ethylcyclopentane, and its oxime, II, 143.  
 3-Benzoyl-5-methylflavone, 7-hydroxy-, and its derivatives, III, 61.  
 $\beta$ -Benzoyl-p-nitrophenylpropionic acids, II, 97.  
 Benzoylphenylalanine-N-acetic acid, m-nitro-, and 3:5-dinitro-, dimethyl ester, II, 425.  
 5-Benzoyl-4-phenyl-1-benzylpiperidine, 4-hydroxy-, II, 270.  
 $\alpha$ -Benzoylphenylisobutyric acid, II, 22.  
 $\alpha$ -( $\beta$ -Benzoyl- $\alpha$ -phenylethyl)- $\beta$ -phenyl- $\beta$ -2:7-dibromo-9-fluorenyl-p-bromopropiophenone,  $\alpha$ - $\beta$ -p-bromo-, II, 19.  
 2-Benzoyl-1-phenyl-4'-cyclohexene, and its dibromide, II, 261.  
 2-Benzoyl-1-phenyl-5-methyl-4'-cyclohexene, and its dibromide, II, 261.  
 (+)-2'-Benzoyl-3'-phenylcyclopropane-1'-carboxylic acid, methyl ester, II, 312.  
 2-Benzoyl-3-phenylcyclopropane-1-carboxylic acid, methyl ester, II, 313.  
 $\alpha$ -Benzoylpropane,  $\alpha$ -hydroxy-, benzoyl and p-nitrobenzoyl derivatives, II, 57.  
 $\alpha$ -Benzoylpropanol, and its derivatives, II, 57.  
 $\beta$ -Benzoylpropionic acid,  $\beta$ -2:4-dihydroxy-, and its p-nitrophenylhydrazone, II, 261.  
 1-Benzoyl-1-n- and -iso-propylcyclopentanes, II, 143.  
 2-Benzoylthiol-3-methylindole, and its silver derivative, II, 423.  
 3-Benzoylthiol-2-methylindole, II, 423.  
 Benzoyltriethylbenzene, p-bromo-, II, 101.  
 p-Benzoyltrihphenylacetic acid, ethyl ester, II, 13.  
 Benzoyltrisopropylbenzene, p-bromo-, II, 101.
- 1-Benzoyl-6-vinyl-2:3-dihydroindole, 4-amino-, benzoyl derivative, II, 359.  
 4-Benzoyl-m-5-xyleneol, II, 360.  
 3:4-Benzpyrene, determination of, in animals, III, 564.  
 elimination of, after injection, III, 251, 625.  
 fluorescence of, I, 226.  
 metabolic products of, III, 696.  
 solubility of, I, 170.  
 spectrum of, absorption, I, 314.  
 synthesis of, from pyrene, II, 86.  
 tumours from application of, III, 612.  
 3:4-Benzpyrene, 2-hydroxy-, and its acetate, II, 7, 8.  
 2:4-Benzthiazine, 3-amino-, and its ethiodide, II, 182.  
 Benzthiazole, derivatives, reactions of, II, 238.  
 dipole moment of, and its derivatives, I, 289.  
 Benzthiazole, 1-chloro-, ammonolysis of, I, 243.  
 7-chloro-4-hydroxy-, 7-chloro-5-iodo-4-hydroxy-, and 4-hydroxy-, II, 290.  
 3-hydroxy-, use of, in analysis, I, 377.  
 6-nitro-5-hydroxy-, II, 153.  
 Benzthiazoles, reduction of, in liquid ammonia, II, 209.  
 Benzthiazoles, 1-thiol-, reactions of, with alcohols, II, 238.  
 Benzthiazole-5:7-disulphonic acid, 4-hydroxy-, II, 290.  
 Benzthiazole-7-sulphonic acid, 4-hydroxy-, and 5-iodo-5-hydroxy-, II, 290.  
 Benzthioidigos, II, 333.  
 Benzthioidirubins, II, 333.  
 1:2-Benzthioxanthene, 6-nitro-, II, 63.  
 1:2-Benzthioxanthone, 6-nitro-, II, 63.  
 Benz-o-toluidide, 2:4-dinitro-, and its N-acetyl derivative, II, 361.  
 Benz-m-toluidide, 2:4-dinitro-, II, 362.  
 Benzthiazoles, constitution of, I, 366.  
 Benzyl alcohol, dielectric polarisation of, I, 293.  
 Benzyl alcohol, 3-chloro-4-hydroxy-, II, 112.  
 4-cyano-, and its phenylurethane, II, 174.  
 Benzyl bromide, 4-nitro-2-hydroxy-, 2-acetyl derivative, II, 260.  
 chaulmoogryl sulphide, II, 390.  
 chloride, polymerisation of, catalysts for, I, 177.  
 chloride, 3-chloro-4-hydroxy-, and 3:5-dichloro-2-hydroxy-, II, 112.  
 ethers, isomerisation of, by lithium phenyl, II, 358.  
 nitrate, reactions of, with alkali hydroxide and with water, I, 401.  
 oleyl ether, II, 390.  
 n-propyl ether, reaction of, with boron fluoride, II, 90.  
 N-Benzyl compounds, hydrogenation of, II, 306.  
 Benzyl-p-acetamidobenzene-2-sulphonic acid, p-nitro-, pyridine salt, II, 328.  
 Benzylacetamidonaphthalenesulphonic acids, p-nitro-, pyridine salts, II, 328.  
 $\alpha$ -Benzylamine- $\epsilon$ -phenylpentan- $\gamma$ -ol, II, 270.  
 Benzyl-p-aminobenzene-2-sulphonic acid, p-nitro-, pyridine salt, II, 328.  
 $\alpha$ -Benzylamino- $\delta$ -benzylidenebutan- $\gamma$ -one, hydrochloride, II, 270.  
 $\alpha$ -Benzylaminobutane,  $\gamma$ -bromo-, and its hydrobromide, II, 270.  
 $\alpha$ -Benzylaminobutan- $\gamma$ -ol, and its derivatives, II, 270.  
 $\alpha$ -Benzylamino- $\delta$ -butylene, and its hydrochloride, II, 270.  
 $\alpha$ -Benzylamino- $\alpha$ -2-ketocyclohexyl- $\beta$ -phenylethane, hydrochloride, II, 270.  
 2-Benzylaminomethylcyclohexanol, and its derivatives, II, 269.  
 2-Benzylaminomethylcyclohexanone, and its derivatives, II, 269.  
 2-Benzylaminomethylcyclopentanone, hydrochloride, II, 270.  
 Benzylaminonaphthalenesulphonic acids, p-nitro-, pyridine salts, II, 328.  
 Benzylaminopropiophenone, and its hydrochloride, II, 270.  
 2-Benzylamino-3:4:5:6-tetrahydropyridine, and its salts, II, 306.  
 Benzyl-2-amino-m-toluenesulphonic acid, p-nitro-, II, 328.
- Benzyl-n-amylohexylamine, II, 288.  
 Benzylanthraquinone-2-sulphonic acid, p-nitro-, pyridine salt, II, 328.  
 Benzylbenzenesulphonic acid, p-nitro-, pyridine salt, II, 328.  
 o-Benzylbenzoic acid, 2':4'-dihydroxy-, II, 198.  
 $\alpha$ -Benzyl- $\alpha$ -benzoylthylcarbamide, II, 270.  
 Benzyl-n-butylhexylamine, II, 288.  
 Benzylbutylmalonic acid, and its dibutyl ester, II, 247.  
 1-Benzylcoumaran. See 1-Benzyl-1:2-dihydrobenzofuran.  
 4-Benzylcoumarin, 7-hydroxy-, and its derivatives, II, 326.  
 5:7- and 7:8-dihydroxy-, and their derivatives, II, 326.  
 S-Benzylcysteine, optical isomerides of acetylation of, in rat and man, III, 42.  
 Benzyl-diethylnonylammonium iodide, II, 288.  
 1-Benzyl-1:2-dihydrobenzofuran, 2:3:5:3':4'-penta-hydroxy-, and its penta-acetyl derivative, II, 234.  
 1-Benzyl-1:2-dihydrobenzofuran-2-ol, 3:5:3':4'-tetrahydroxy-, tetrabenzoyl derivative, II, 234.  
 9-Benzyl-1 $\alpha$ :4 $\alpha$ -dihydro-1:2:3:4-dibenzofluorene, II, 168.  
 5-Benzyl-2:3-dimethylmethylrharnofuranoside, II, 302.  
 Benzylidimethylnonylammonium iodide, II, 288.  
 Benzylidinonamine, II, 288.  
 Benzylethylhexylamine, II, 288.  
 Benzylethylmalonic acid, and its dibenzyl ester, II, 247.  
 Benzylethyl-nonylamine, II, 288.  
 Benzyl-n-hexadecylmalonic acid, diethyl ester, II, 247.  
 Benzyl-p-hydroxybenzene-2-sulphonic acid, p-nitro-, pyridine salt, II, 328.  
 Benzyl-p-hydroxydeoxybenzoin, II, 316.  
 2-Benzyl-4-hydroxyethyldecahydroisoquinoline, 10-hydroxy-, and its hydrobromide, II, 270.  
 Benzylidene dibromide, 4-nitro-2-hydroxy-, 2-acetyl derivative, II, 260.  
 o-chlorocinnamidomethyl ether, II, 194.  
 Benzylideneacetamidotoluidines, II, 330.  
 Benzylideneacetone, polarographic waves in mixtures of acetophenone and, I, 24.  
 Benzylideneacetophenone, 4:4'-dicyano-, II, 173.  
 p-Benzylideneaminobenzene-sulphonylglycine, II, 222.  
 5- and 6-Benzylideneaminoindazoles, II, 273.  
 16-Benzylidene- $\Delta^5$ -androstene, 3:17-dihydroxy-, diacetyl derivative, II, 413.  
 16-Benzylideneisoandrosterone, II, 413.  
 Benzylideneaniline, steric structure of, II, 361.  
 Benzylideneaniline, 2-amino-, polycyclic systems from, II, 331.  
 Benzylidenebisphenylacetamide, m- and p-nitro-, II, 313.  
 Benzylidene-n-butylamide, o-nitro-, II, 197.  
 1-Benzylidenecoumaran-2-ones, reactions of, II, 285.  
 Benzylidenediacetamide, p-nitro-, II, 313.  
 Benzylidenedibenzamide, p-nitro-, II, 313.  
 Benzylidenedi-n-butylamide, m- and p-nitro-, II, 313.  
 Benzylidenediformamide, m- and p-nitro-, II, 313.  
 Benzylidenedi-n-heptoamide, m- and p-nitro-, II, 313.  
 1-Benzylidene-1:2-dihydrobenzofuran-2-one, 3:5:3':4'-tetrahydroxy-, tetrabenzoyl derivative, II, 234.  
 Benzylidenedihydrobrucine-9-acetic acid, and its perchlorate, II, 291.  
 Benzylidene-2:8-dimethyldicyclo[0:3:5]-decan-5-one, II, 287.  
 Benzylidenedipropionamide, m- and p-nitro-, II, 313.  
 9-Benzylidenefluorene, 2:7-dibromo-9-o-amino-, and its 9-o-acetyl derivative, II, 192.  
 Benzylidene-n-heptoamide, o-nitro-, II, 197.  
 Benzylidene-p-hydroxydeoxybenzoin, and acetate, II, 316.  
 Benzylidene- $\beta$ -hydroxyethylamine, II, 399.  
 $\delta$ -Benzylidenellevulic acids, reaction of, with acetic anhydride, II, 148.

- Benzylidenemalononic acid, *m*-bromo-, *m*-chloro-, *p*-chloro-, and its diethyl ester, II, 97.  
Benzylidenemalononitrile, *p*-nitro-, I, 225.  
Benzylidene-*p*-methoxydeoxybenzoic acid, II, 316.  
3-Benzylidene-1-methyloxindole, 3-2'-amino-, and 2'-nitro-, II, 331.  
Benzylidenenonylamine, II, 288.  
Benzylideneoxindole, 2-amino-, and its diacetyl derivative, and 2-nitro-, II, 331.  
Benzylidenephénylacetic acid, *o*-nitro-, II, 197.  
Benzylidene-*o*-phenylenediamine, pyrogenic oxido-reduction of, II, 380.  
21-Benzylidene- $\Delta^5$ -pregnen-3( $\beta$ )-ol-20-one, II, 322.  
21-Benzylideneprogesterone, II, 322.  
Benzylidenepropionamide, *o*-nitro-, II, 197.  
Benzylidenetherodanines, hydroxy-, applications of, in analysis, I, 278.  
16-Benzylidenetesterone acetate, II, 103.  
 $\beta$ -Benzyliminoadipic acid, methyl ethyl ester, II, 426.  
 $\alpha$ -Benzyl- $\alpha$ - $\gamma$ -ketobutylcarbamide, II, 270.  
 $\alpha$ -Benzyl- $\alpha$ -2-ketocyclopentylmethylcarbamide, II, 270.  
Benzylmalonic acid, dibutyl ester, II, 247.  
Benzylmalonic acid, *p*-iodo-, ethyl ester, II, 311.  
Benzyl-*p*-methoxydeoxybenzoic acid, II, 316.  
5-Benzyl-5-methoxymethylbarbituric acid, II, 151.  
5-Benzyl-5-*m*-methoxyphenoxymethylhydantoin, II, 327.  
Benzyl-*m*-methoxyphenoxymethyl ketone, and its derivatives, II, 327.  
 $\alpha$ -Benzyl- $\alpha$ -methylacetone, dinitrophenylhydrazones, II, 140.  
4-Benzyl-7-methylcoumarin, 5-hydroxy-, and its derivatives, II, 326.  
4-Benzyl- $\alpha$ -naphthacoumarin, II, 326.  
Benzyl-naphthalene-2-sulphonic acid, *p*-nitro-, pyridine salt, II, 328.  
3-Benzyl-1-2'-4'-dinitrophenylisindazole, II, 66.  
Benzyl-*n*-nonylamine, and its hydrochloride, II, 288.  
 $\alpha$ -Benzyl-*n*-octadeco-2:4:6-tribromoanilide, II, 247.  
5- $\beta$ -Benzyl-5-ethoxyethyl-5-ethylbarbituric acid, II, 151.  
Benzylloxymethyl acetate, II, 255.  
 $\alpha$ -*o*-Benzylphenylisobutyric acid,  $\alpha$ -*o*-hydroxy-, lactone, II, 22.  
5-Benzyl-3-phenylhydantoin, II, 76.  
1-Benzylpiperidine, 2-imino-, picrate, II, 306.  
21-Benzyl- $\Delta^5$ -pregnen-20-one, 3( $\beta$ )-hydroxy-, acetyl derivative, II, 322.  
21-Benzylprogesterone, II, 322.  
Benzyl-*n*-propylhexylamine, II, 288.  
Benzyl-*n*-propylnonylamine, II, 288.  
1-Benzylpyrrol-5-one-2-acetic acid, ethyl ester, II, 426.  
Benzylquinol, effect of, on oxidase systems, III, 264.  
 $\delta$ -Benzylsemicarbazide, *p*-nitro-, and its derivatives, II, 88.  
and its hydrochloride, II, 169.  
2-Benzyltetrahydrobenzindazole, hydrochloride, II, 270.  
Benzylthiolacetic acid, *p*-amino-, and *p*-nitro-, II, 172.  
 $\gamma$ -Benzylthiolbutyric acid,  $\alpha$ -hydroxy-, metabolism of. See under Metabolism.  
*dl*- $\alpha$ -hydroxy-, II, 3.  
metabolism of. See under Metabolism.  
 $\beta$ -Benzylthiolpropionic acid,  $\alpha$ -hydroxy-, metabolism of. See under Metabolism.  
*l*- and *dl*- $\alpha$ -hydroxy-, II, 3.  
 $\beta$ -*p*-nitro-, II, 172.  
2-Benzylthiopyrimidine-5-carboxylic acid, 6-chloro-, and 6-hydroxy-, ethyl esters, II, 332.  
Benzylthiophen, 2:5-3:4-tetrabromo-, and 3:4-dibromo-2:5-dihydroxy-, II, 62.  
Benzyl- $\psi$ -thiuronium bromide, *p*-bromo-, use of, in identification of organic acids, II, 129.  
salts, *p*-bromo-, II, 129.  
Benzyl-*o*-toluenesulphonic acid, *p*-nitro-, pyridine salt, II, 328.  
3-Benzyl-1:2:4-triazole, 5-hydroxy-, and its silver salt, II, 428.  
Benzyltrimethylammonium iodide, physiological action of, III, 630.
- Benzyl-4-xylenesulphonic acids, *p*-nitro-, pyridine salts, II, 328.  
Beri-beri, antibody response in, III, 831.  
in children, III, 328.  
infantile, III, 910.  
in relation to breast feeding, III, 539.  
prevention of, III, 540.  
spontaneous, compared with avitaminosis in monkeys, III, 539.  
symptoms of, due to vitamin- $B_1$  deficiency, III, 406.  
Berlinite, isotopy of quartz and, I, 123.  
Beryllium, fluorescence test for, I, 113.  
optical constants of, I, 316.  
photo-disintegration of, I, 162.  
radioactive,  $\gamma$ -rays accompanying decay of, I, 383.  
Beryllium orthoborate, I, 398.  
hydroxide, autoclave treatment of, I, 237.  
iodide, basic, hydrosols, catalysis with, I, 333.  
oxide, equilibrium of, with lithium and boron oxides, I, 398.  
Beryllium detection and determination:—  
detection of, microchemically, with ammonium molybdate, I, 409.  
determination of, in silicates, I, 72.  
Bertane, reactions of, with organic disulphides, primary aromatic amines, and sodium sulphite, II, 137.  
structural specificity of, in trans-methylation, III, 619.  
Bertane aldehyde, oxidation of, by enzymes, effect of diphosphopyridine nucleotide on, III, 846.  
*Betula papyrifera*, sap of, III, 848.  
Betulin diacetate, degradation of, by ozone, II, 266.  
oxide of, II, 266.  
isoBetulin diacetate, II, 266.  
Bile, absence of, iron absorption in, III, 608.  
bromsulphalein excretion in, III, 32, 610.  
calcium, cases with, III, 459.  
carcinogenic and non-carcinogenic hydrocarbon excretion in, in fowls, III, 251.  
composition and volume of, on fasting and after high carbohydrate feeding, III, 896.  
determination in, of calcium, III, 244.  
of keto-cholic and deoxycholic acids, III, 459.  
effect of, on sodium oleate absorption from jejunum of dogs, III, 754.  
on susceptibility to convulsions in rats, III, 806.  
fistula, amalgam reduction of, urobilin after, in man, III, 819.  
flow of, effect of anaemia and oxygen therapy on, in nembutalised dogs, III, 206.  
effect of intestinal distension on, III, 242.  
formation and storage of, in liver cells, effect of X-rays on, III, 610.  
hepatic, flow of, effect of aloe and podophyllum on, III, 482.  
oestrogen excretion in, III, 811.  
preparations, determination in, of carbonyl compounds, III, 394.  
radioactive calcium and strontium excretion in, III, 694.  
secretion of, and bile salt therapy, III, 459.  
stasis in, gallstones induced by, III, 394.  
surgical drainage, bile-salt concentration in, and liver function, III, 610.  
third fraction of, III, 459.  
Bile acids, II, 103, 366.  
and their derivatives, II, 411, 412.  
dipole moments of, I, 387.  
introduction of double linkings into, II, 103.  
metabolism of. See under Metabolism.  
Bile ducts, obstruction of, effect of parabiosis on hepatic changes after, III, 819.  
stones in, III, 610.  
visualising interior of, at operation, III, 610.  
Bile pigments, II, 289, 333.  
formation of, *in vitro*, II, 34.  
glucobilin type, from hemins, II, 382.  
intracorporeal formation of, III, 712.  
Bile salts, cathartic action of, evaluation of, in mice, III, 482.  
effect of, on intestinal absorption of chloride, III, 817.  
toxicities and choleric activities of, III, 320.
- Bilanic acid, oxime, lactam of, oxidation of, II, 103.  
Biliary tract, disease of, procrastination danger in, until kidney and liver changes, III, 459.  
effect on, of splanchnic nerve section, III, 32.  
liver and, III, 754.  
Bilirubin, clearance of, from plasma, as measure of liver excretion, III, 243.  
in body fluids, direct diazo-reaction and photo-electric colorimeter tests for, III, 897.  
plasma-. See under Blood-plasma.  
serum-. See under Blood-serum.  
spectrum of, absorption, in solutions, III, 775.  
synthesis of, II, 334.  
Billverdin, synthesis of, II, 334.  
Biochemistry, in relation to psychiatry, III, 806.  
physical aid in, for metabolism investigation, III, 42.  
Biolac, value of, as infant food, III, 326.  
Biological extracts, spectroscopy of, III, 613.  
Biological fluids, determination in, of riboflavin, fluorometrically, III, 254.  
of sulphanilamide and sulphapyridine, III, 46.  
viscosity of, III, 263.  
Biological materials, methacrylate plastics as mounting media for, III, 7.  
Biology, borderland problems in, III, 263.  
linkage of physico-chemical processes in, III, 341, 639.  
microscope in, III, 793.  
physical methods in, III, 263.  
research in, use of neutrons in, I, 286.  
specimens in, preservation of, III, 602.  
preserved, formalin removal from, III, 502.  
Biometry, standardisation in, III, 867.  
Bios, proliferation-promoting activity of components of, III, 717.  
Bios V, identification of, as vitamin- $B_1$ , III, 470.  
Bios VII, identification of, as vitamin- $B_2$ , III, 470.  
Biotin, activity of, effect of reagents on, III, 59.  
adipic acid from oxidation product of, II, 386.  
anti-factor for, from egg-white, III, 407.  
as growth factor for insects, III, 540.  
assay of, microbiologically, III, 472.  
constitution of, and its derivatives, II, 37, 211.  
content of, in tumours and other tissues, III, 251.  
cure of paralysis with, in rats, III, 832.  
deficiency of, in relation to recessions in malignancy, III, 697.  
degradation and resynthesis of, II, 242.  
derivatives of, II, 336, 387.  
distribution of, abnormalities of, in embryos and tumours, III, 903.  
in hen's eggs, III, 621.  
effect of, on fat synthesis and metabolism, III, 254.  
on physiological functions, III, 540.  
on reproduction in fowls, III, 911.  
extraction of, from tissues, III, 701.  
growth-promoting effect of diaminocarboxylic acid from, III, 937.  
inactivation of, egg-white injury due to, III, 156.  
isolation of, from milk, III, 540.  
prevention of, by dermatitis in turkey poults, III, 540.  
of perosis, III, 621.  
procarcinogenic effect of, in butter-yellow tumour formation, III, 697.  
requirement of, for micro-organisms, measured with avidin, III, 718.  
structure of, X-ray, I, 390.  
treatment with, of egg-white injury in man, III, 701.  
of spectacle eye condition in rats, III, 448.  
Birch tree. See *Betula papyrifera*.  
Birds, atresia in, bursting of follicles at beginning of, III, 600.  
egg laying and gonad development in, effect of day length and energy on, III, 125.  
homeothermy development in, III, 462.  
wild, egg temperatures of, III, 141.  
Birth-death rate in British Guiana, III, 347.  
Bis-1-acridylic acid, metallic complex salts of, II, 32.

- α*-Bisazo-dyes, chromophore separation in, II, 89.
- 2,4-Bisbenzeneazophenol, 3-bromo-, and 3-iodo-, II, 308.
- Bis(benzenesulphonmethylamidomethyl)methylamine, II, 164.
- Bisbenzimidazoles, II, 181.
- 4,4'-Biscamphorimidodiphenylsulphone, II, 140.
- 4,4'-Biscarbethoxyformamidodiphenylsulphone, II, 140.
- 4,4'-Bis- $\gamma$ -carboxymethoxyoctamidodiphenylsulphone, II, 140.
- 4,4'-Biscarboxyacetamidodiphenylsulphone, II, 140.
- 4,4'-Bis-*o*-carboxybenzamidodiphenylsulphone, II, 140.
- 4,4'-Biscarboxyformamidodiphenylsulphone, II, 140.
- 4,4'-Bis- $\eta$ -carboxyoctamidodiphenylsulphone, II, 140.
- 4,4'-Bis- $\beta$ -carboxypropionamidodiphenylsulphone, II, 140.
- 5,4'-Bischloroacetyl-2-methoxydiphenyl ether, II, 362.
- Bis- $\beta$ -chloroethyl ether. See Chlorex.
- Biscuits, dog, in relation to canine hysteria, III, 618.
- Bisdemethylbromodihydrodeoxybrucine hydrobromide, II, 39.
- Bisdemethylidihydrodeoxybrucine hydrobromide, II, 39.
- $\alpha$ -Bisdeoxy- $\beta$ - $\gamma$ -diisopropylidenedulcitol, II, 296.
- $\alpha$ -Bisdeoxydulcitol, II, 296.
- 3,14-Bisdeoxythevetigenin, II, 415.
- 5,6-Bisdicarbethoxymethyl-2,3-dimethylbenzoquinone, II, 267.
- 3,3-Bis-(3',4'-dimethoxyphenyl)oxindole, II, 115.
- $\alpha$ -Bisdimethylamino- $\beta$ -ethoxy- $\beta$ -methylpropane, and its derivatives, II, 165.
- $\alpha$ -Bisdimethylamino- $\beta$ -methylpropane, and its derivatives, II, 165.
- $\alpha$ -Bisdimethylamino- $p$ -methylpropane,  $\beta$ -chloro-, and its diplicate, II, 165.
- $\alpha$ -Bisdimethylamino- $\beta$ -methylisopropyl alcohol, and its derivatives, II, 165.
- $\alpha$ -Bisdimethylaminoisopropyl alcohol, and its dimethiodide, II, 165.
- Bis(ethylenediamine)mercuric salts, I, 180.
- Bisfurfuraldoximecobalt, II, 28.
- Bisfurfuraldoximenickel, II, 28.
- Bisfurfuraldoximepalladium, II, 28.
- Bisfurfuraldoximepalladous chloride, II, 28.
- Bisfurfuraldoximeplatinaous chloride, II, 28.
- Bisfurfuraldoximeplatinum, II, 28.
- Bis- $\alpha$ -hydroxy- $\omega$ -carboxyoxetyl peroxide, II, 187.
- 3,3-Bis-(4'-hydroxy-3'-methoxyphenyl)oxindoles, and their derivatives, II, 115.
- Bis- $\alpha$ -hydroxynonyl peroxide, II, 187.
- Bismarsen, treatment with, of lupus erythematosus, III, 413.
- 3,4,3',4'-Bismethylenedioxy stilbene,  $\alpha$ -cyano-, II, 257.
- Bismuth films, electrical conductance and photoelectric emission of, I, 29.
- photo-electric threshold of, I, 29.
- isotopes, artificial radioactive, I, 79.
- photo-electric properties of, I, 126.
- spectrum of, X-ray, and structure, I, 349.
- Bismuth alloys, with aluminium, antimony, and lead, I, 394.
- with tin, thermodynamics of, I, 294.
- Bismuth compounds, identical in chemical origin with sobisminol mass, III, 711.
- soluble, toxicity of, and retention in blood and organs, III, 635.
- Bismuth barium oxybromide and oxychloride, crystal structure of, I, 291.
- cadmium oxybromides and oxychlorides, crystal structure of, I, 260.
- calcium oxybromides and oxychlorides, I, 291.
- oxide, crystal structure of melts of cadmium oxide and, I, 136.
- $\alpha$ -trioxide, crystal structure of, I, 46.
- oxides, higher, I, 275.
- periodate, I, 246.
- strontium oxyhalides, crystal structure of, I, 259.
- Bismuth sulphide, equilibrium of, with cobalt sulphide, I, 329.
- Bismuthates, I, 275, 305.
- Bismuth organic compounds, reaction of, with monobasic organic acids, II, 240.
- Bismuth diethyl ethoxide, II, 240.
- triethyl, oxidation of, II, 240.
- Bismuth determination:—
- determination of, in biological material, III, 280.
- in presence of lead, I, 155.
- polarographically, I, 279.
- volumetrically, as caffeine tetraiodobismuthate, I, 184.
- with dithizone, III, 724.
- with salicylaldehyde, I, 73.
- Bis-( $\alpha$ -naphthylthiocarbimide) oxide, II, 275.
- 4,4'-Bis-( $p$ -nitrobenzamido)diphenylsulphone, II, 222.
- $\Delta^{1,6}$ -Bisnorcholadiene-3( $\beta$ ):20-diol, and its acetate, II, 322.
- Bisnordeoxypantothenic acid. See  $\beta$ -Butyramidopropionic acid,  $\beta$ - $\gamma$ -hydroxy-.
- Bisnorallohydroxycholeic acid, II, 231.
- Bisnorlupanic acid, dihydroxy-, and its methyl ester and its diacetate, II, 266.
- Bisnoroleic acid. See  $\Delta^4$ -Hexadecenoic acid.
- 1,1:5,5-Bispentamethylenebiuret, II, 329.
- $\alpha$ -Bis(phenylthiocarbamido)butane, II, 124.
- $\alpha$ -Bis(phenylthiocarbamido)pentane, II, 124.
- 4,4'-Bisphthalimidodiphenylsulphone, II, 140.
- Bispyridinebisfurfuraldoximepalladium, II, 28.
- Bispyridinebisfurfuraldoximeplatinum, II, 28.
- 4,4'-Bis-succinimidodiphenylsulphone, II, 140.
- $\alpha$ -Bis(trimethylammonium- $\beta$ -methylpropenylene) derivatives, II, 165.
- Biurets, narcotic action of, containing piperidine, II, 329; I, 710.
- Bixbite, Black Range, New Mexico, I, 345.
- Black currants, vitamin-P in, III, 913.
- Blackcurrant purée, as source of vitamin-C, III, 329.
- "Blackhead" in turkeys, control of, III, 413.
- Blacktongue, canine, effect on, of nicotinuric acid, III, 471.
- Blackwater fever, miscarriage after, III, 175.
- Bladder, cancer of, treatment of, with X-rays, III, 339.
- extrophy of, inulin clearances in newborn infant with, III, 460.
- lesions of, due to crystalline  $\alpha$ -strone pellets, III, 234.
- mucosa of, alcohol antemortem and post-mortem diffusion through, III, 820.
- nerve control in, III, 676.
- nerves of, of frog and turtle, III, 300.
- neurogenic, autonomous, treatment of, surgically, III, 676.
- cystometry and tidal irrigation of, III, 898.
- vesical dysfunction of, III, 885.
- sarcoma of, in infants, III, 466.
- Blast, physiological effects of, III, 582.
- radiology of chest damage due to, III, 639.
- Blastomogenic substances, in human body, III, 397.
- Blastomyces dermatitidis*, infection by, III, 718.
- Blastomycoides histolytica*, detection of, in nervous system infections, III, 346.
- Blastomycosis, human, tissue reactions in, III, 850.
- in mice, III, 718, 849.
- Bleeding. See Hemorrhage.
- Blindness, colour-. See Colour-blindness.
- hemiplegia and, after cerebral embolism, III, 225.
- heredity in relation to, and its prevention, III, 590.
- night, forms of, III, 24.
- prenatal causes of, III, 590.
- Blisters, artificial, in dermatitis herpetiformis, for eosinophil study, III, 290.
- formation of, and Donnan equilibrium, III, 575.
- Bloat, rumen gases and, in ruminants, III, 818.
- Blood, III, 729, 793.
- acid-base equilibrium in, III, 800.
- effect on, of temperature changes, III, 197.
- adrenocortical compounds in, III, 382.
- Blood, ammonia in, in nephrectomised and nephritic dogs, III, 875.
- arsenic content and trypanocidal activity of, after trypanamide administration, in man, III, 168.
- arterial, oxygen saturation changes in, after death from asphyxia or heart failure, III, 581.
- arterial and cerebral venous, in man, III, 875.
- arterial and renal, pressor activity of, in hemorrhage and shock, III, 898.
- ascorbic acid in, effect on, of gonadotropic substance in pregnant mare serum, in castrate bovine, III, 750.
- of hyperpyrexia, III, 799.
- in immunology, in guinea-pigs, III, 833.
- stability of, III, 875.
- stability and transfer of, effect of erythrocytes and leucocytes on, in man, III, 86.
- ascorbic acid and haemoglobin distribution in, in vertebrates, III, 875.
- ascorbic acid, ascorbigen, and haemoglobin in, relation between, in scurvy in guinea-pigs, III, 875.
- bactericidal power of, effect of time on, III, 198.
- bank of, operation of, III, 10.
- organisation of, at Mount Sinai Hospital, III, 368.
- bicarbonate and chloride distribution in, after hydrochloric acid addition, III, 800.
- blackwater fever, transfusion with, during haemolytic crisis, III, 194.
- calcium in, in relation to gastric secretion, III, 241.
- calcium, inorganic phosphorus, and serum-proteins in, in horses, III, 438.
- capillary resistance and extravascular suffusion of, III, 204.
- cell volume of, measurement of, III, 10.
- chemical equilibrium between aqueous humour and, III, 589.
- chemistry of, in Bechuana, III, 198.
- in foxes, III, 434.
- chilled, use of, III, 368.
- chloride withdrawal from, by gastric glands, III, 456.
- choline-esterase activity in, effect of nerve stimulation on, III, 12.
- circulating, leucocytosis-promoting factor in, III, 510.
- oxygen saturation of, indication device for, in man, III, 297.
- volume of, effect of coramine on, III, 87.
- effect of posture on, in hypotension and tachycardia, III, 10.
- citrated, coagulation of, effect of heparin on, in presence of staphylococci, III, 873.
- effect of administration of, on faeces in man, III, 457.
- preservation of, effect of glucose on, III, 88.
- coagulation of, III, 369.
- anti-effects of rare-earth salt injection on, in man and rabbits, III, 798.
- calcium in, III, 196.
- delayed, in methyl methacrylate vessels, III, 9.
- effect on, of electric currents and electrically charged surfaces, III, 574.
- of foreign surfaces, III, 664.
- of 3,3'-methylenebis-(4-hydroxycoumarin), III, 798.
- of nicotinic acid, III, 8, 90.
- fibrinolysis in, III, 664.
- prevention of, in circulation studies, III, 195.
- time of, effect on, of rabbit thrombin administration, III, 437.
- of various agents, in dogs, III, 164.
- of vitamin-K derivative, in turtles, III, 91.
- Weltmann's, III, 8, 193.
- coagulation and prothrombin time in, effect of 3,3'-methylenebis-(4-hydroxycoumarin) on, in dog and man, III, 90.
- collection of, III, 663.
- for lactic and pyruvic acid determination, III, 733.
- for transfusion, shaking device used in, III, 732.

- Blood**, composition of, action of macrophage-containing erythrocytes on, III, 192.  
and urine, in relation to kidney function, III, 245.  
from ear-lobe, III, 434.  
of dogs, III, 438.  
concentration changes in, in pregnancy, III, 293.  
copper in, of sheep and cows, III, 438.  
creatinine in, III, 665.  
cultures of, carbon dioxide delivery apparatus for, III, 723.  
cytology of, effect on, of endometritis in dogs, III, 510.  
deproteinisation of, with reference to peptide-nitrogen, III, 197.  
density of, in relation to density of plasma, and red cell count, III, 197.  
disorders in, determination in, of blood-lipins, III, 198.  
in newborn, III, 508.  
donors, arterial thromboses in, III, 90.  
fainting in, III, 730.  
requirements in, III, 869.  
response of, to iron, III, 88.  
effect on, of adrenalectomy, hypophysectomy, and thyroidectomy, in rats, III, 198.  
of castration and sex hormones, in rats, III, 370.  
of oestradiol and stilboestrol, III, 132.  
of oestrogens, in dogs and monkeys, III, 198.  
of radio-phosphorus, in monkeys, III, 370.  
electrical conductivity of, III, 774.  
electrolytes in, effect on, of ether anaesthesia, III, 260.  
enzymes in, after pancreatic duct ligation, III, 370.  
in aged, III, 733.  
examination of, standardisation of, III, 435.  
fat of, in cows, III, 799.  
in old age, III, 293.  
films, stained, dark-field illumination for study of, III, 365.  
preparations of, III, 86.  
flow of. See Blood circulation.  
foetal and neo-natal, oxygen capacity of, III, 206.  
gases of, effect of light on, III, 340.  
glucose in, effect of insulin, metrazol, and electric shock on, III, 293.  
glucose value of, capillary-venous differences in, during glucose tolerance test, III, 576.  
glycolysis in, effect of sodium fluoride and sodium iodoacetate on, III, 198.  
gonadotropin in. See under Gonadotropin.  
groups, blood dyscrasias among, III, 88.  
classification of, III, 662.  
effect on, of inbreeding, in Syria, III, 6.  
of ultra-violet rays, III, 290.  
in India, III, 82, 365.  
of the Doms, III, 730.  
serum-proteins in relation to, III, 290.  
surnames and, in North and South Wales, III, 509.  
groups, A, weak antigen of, II, 571.  
groups, ABo, diagnosis of, III, 367.  
grouping of, salt concentration in technique of, III, 794.  
haematological value changes in, in elderly patients, III, 193.  
haemoglobin concentration in, in man, III, 193.  
haemolysis of, rate of, stored in glucose and other solutions, III, 662.  
histamine in, effect on, of rattlesnake venom and trypsin in guinea-pigs and rabbits, III, 632.  
of trypsin, III, 12.  
human, foetal and maternal, properties of, III, 86.  
in minute vessels, cell-plasma ratio of, in relation to venous blood, III, 87.  
in nutritional deficiency in monkeys, III, 871.  
infusions of, into bone marrow, III, 663.  
insulin concentration in, in normal and depancreatized dogs, III, 308.  
invertebrate, staining of, after osmic acid fixation, III, 365.
- Blood**, iodine in, fractionation of, III, 438, 575.  
in New York City area, III, 322.  
nature of, III, 370, 575.  
lactic acid in, effect of insulin, metrazol, and electric shock on, III, 293.  
lactic and pyruvic acids in, in relation to ancurin deficiency in pigeons, III, 700.  
lactogen in, effect of oestrone on, in rabbits, III, 598.  
lancet for, from laboratory accessories, III, 191.  
lipins in, in hypophysectomised, thyroid-ectomised dogs, III, 747.  
increase in, in fasting mice, III, 371.  
loss of, acute, in normal subjects, III, 289.  
magnesium content of, in disease, spectrum of, III, 370.  
nitrogenous constituents of, effect of kidney damage on, in dogs, III, 460.  
non-protein-nitrogen in, after glucose injection in rabbits, III, 575.  
effect on, of meat extractives, III, 370.  
normal and pathological, electrophoretic patterns and sedimentation rates of, in man, III, 571.  
occult, in faeces, III, 754.  
oestrogen content of, at intervals, III, 12.  
oxalic acid in, III, 45.  
oxygenation of, in fish, III, 736.  
oxygenator for, III, 15.  
pantothenic acid in, effect of glucose on, III, 512.  
peripheral, neutrophils and lymphocytes of, cytology of, in man, III, 872.  
pharmacology of, after X-rays, in man, III, 793.  
phospholipins of. See under Phospholipins.  
phosphorus in, changes in, after repeated bleedings in rats, III, 294.  
radio-, and its excretion in health and leukaemia, III, 89.  
in polycythemia, III, 287.  
retention of, and its excretion and therapeutic effect, in leukaemia, III, 436.  
physicochemistry of, in man, III, 573.  
irradiated with visible light, III, 340.  
picture of, effect on, of oestrogens, III, 130, 234.  
of parturition, in cows, III, 434.  
of sex and gonadotropic hormones, in rats, III, 239.  
in horses, III, 289.  
in lambs with parasitic gastritis, III, 570.  
placental, in amenorrhoea, III, 314.  
post-mortem, glucose and non-glucose reducing substances in, III, 12.  
potassium in, effect on, of anaphylactic shock, III, 199.  
movements of, rôle of lactic acid in, III, 199.  
of wild animals, III, 732.  
preserved, transfusion of, effect of, on leucocyte count of recipient, III, 196.  
proteins, interaction of, with dietary nitrogen in rats, III, 914.  
variations of, III, 437.  
prothrombin in, at high altitudes, III, 664.  
See also Prothrombin.  
pyruvic acid in, curves of, after glucose ingestion in normal and thiamin-deficient subjects, III, 38.  
decrease of, III, 12.  
effect of citric acid on, III, 158.  
effect of insulin, metrazol, and electric shock on, III, 293.  
fate of, during glycolysis, in rats, III, 294.  
pathological changes in, III, 379.  
regeneration of, relation between spleen and, III, 508.  
removal from, of amines, III, 292.  
of pyruvic acid, in man, III, 293.  
renal and systemic, in hypertension, effect of, on arterial rings, III, 441.  
rheology of, III, 732.  
salmon, during migration, III, 736.  
sedimentation of, III, 192, 435.  
separation from, of radioactive iron, III, 504.  
of serum, flask for, III, 367, 510.
- Blood**, shed, vasoconstrictor substances in, effect of, on perfused organs, III, 203.  
sickle, and its diagnosis, III, 435.  
smears, staining of, III, 191.  
in opsonocytaphagic tests, III, 8.  
staining of elements of, supravitral and vital, III, 869.  
stored, III, 289.  
glucose addition to, III, 572.  
value of, test of, III, 367.  
substitutes for, gelatin as, after haemorrhage, III, 794.  
gelatin and isinglass as, III, 194.  
use of, in armed forces, III, 510.  
sugar in, curves of, III, 512.  
effect on, of anoxia in adrenalectomised pancreatetectomised dogs, III, 581.  
of bis-p-aminobenzoyl-L-cystine, III, 370.  
of eyeball compression, in rabbits, III, 93.  
of nicotine, in dogs, III, 411.  
of parotid extract, in rats, III, 511.  
of traumatic shock, in adrenalectomised rats treated with adrenal extract, III, 382.  
regulating centres of, effect of hypnotics on, III, 483.  
sulphanilamide and sulphapyridine concentrations in, III, 704.  
transfusion of, III, 289.  
air accidents during, III, 869.  
apparatus for, III, 863.  
apparatus and methods for, III, 194.  
complications after, III, 794.  
haemolytic, intra-group, reaction in, due to Rh agglutinin from isoimmunisation in pregnancy, III, 366.  
haemolytic reactions in, III, 870.  
hazards of, III, 794.  
in air-raid casualties, III, 193.  
isoagglutinin changes after, III, 290.  
isohaemo-, sensitisation and desensitisation in, III, 193.  
prevention of syphilitic infection in, III, 194.  
reactions after, and their causes, III, 795.  
immunity to, III, 367.  
reactions due to Rh-factor in, III, 870.  
renal changes after, III, 662.  
treatment with, of blood diseases and haematemesis, III, 193.  
of obstetric shock and haemorrhage, III, 869.  
unmodified, apparatus for, III, 194.  
with universal blood and hetero-group, III, 193.  
trout, oxygenation of, effect of temperature on, III, 581.  
typing of, A and B globulin fractions for, III, 869.  
ultra-violet irradiation of, in treatment of pyogenic infections, III, 481.  
universal donor, conserved, transfusion indications of, III, 794.  
life-saving power of, in exsanguinating haemorrhage, III, 794.  
urea in, changes in, after hypothalamic lesions, III, 377.  
viper's, toxicity of, seasonal variation in, III, 712.  
viscosity of, III, 572, 734.  
vitamin-A content of, effect of alcohol on, in man, III, 93.  
effect of alcohol and tricesol on, in chicks, III, 620.  
vitamin-A level in, as vitamin-A deficiency index in infants and children, III, 538.  
volume of, after exercise, III, 574.  
determination of, with T-1824, III, 795.  
effect on, of adrenaline, III, 795.  
of alcohol, III, 87.  
of partial hepatectomy in rats, III, 731.  
Griffith-Campbell method for measuring, III, 10.  
in relation to umbilical cord clamping in newborn infant, III, 869.  
seasonal and postural changes in, III, 289.
- Blood analysis** :-  
analysis of, microchemically, III, 575.  
detection of, luminol test for, III, 573.



**Blood analysis :—**

determination in, of adrenaline, in allergy, III, 858.  
 of ascorbic acid, III, 12, 622.  
 of bromide, III, 576, 864.  
 of chloral hydrate, chloroform, and related substances, III, 632.  
 of diodrast, III, 428.  
 of divinyl ether, III, 369.  
 of ethyl alcohol, III, 724.  
 of fat, volumetrically, III, 799.  
 of fructose, skatole colour reaction in, III, 512.  
 of glucose, III, 576.  
 of inulin, III, 427.  
 of lactic acid, III, 875.  
 of lead, III, 665.  
 of lipins, in blood disorders, III, 198.  
 of nitrates, III, 503.  
 of nitrogen, III, 952.  
 of oestrogens, III, 688.  
 of oestrogenic hormones in premenstrual asthma, III, 688.  
 of phytate-phosphorus, III, 199.  
 of progesterin, in pregnant women, III, 135.  
 of proteins, by micro-Kjeldahl and nesslerisation, III, 92.  
 of quinine, III, 864.  
 of sugar, absorptiometrically, III, 576.  
 of sulphanilamide, and its derivatives, III, 704.  
 of sulphathiazole, III, 704.  
 of sulphonamides, III, 704, 917.  
 of thiamin, by fermentation, III, 92.  
 of urea, apparatus for ammonia distillation in, III, 732.  
 of urea-nitrogen, III, 656.  
 of vitamin-C, III, 702.  
 of water, III, 437.  
 hæmatocrit, determination in, "black line" in, III, 732.  
**Blood-capillaries, cerebral.** See under Brain.  
 fragility of, in man, III, 574.  
 in peace and war, III, 878.  
 human, effect of light on, III, 340.  
 hydrostatic pressure in, during oedema formation in heart failure, III, 579.  
 permeability of, effect on, of deoxycorticosterone acetate, III, 450.  
 of oestrogens and other steroids, III, 602.  
 increase of, in inflammation, III, 13.  
 trypan-blue test for, III, 579.  
**Blood circulation, arm-tongue, in chronic asthma, III, 734.**  
 cerebral, blood-corpuscle stains in demonstration of, III, 667.  
 effect of arrest of, on synaptic terminals and perikaryon, III, 213.  
 effect of raised intracranial pressure on, III, 579.  
 in convulsions, III, 667.  
 coronary, atypical, III, 96.  
 effect on, of anoxia, asphyxia, and myocardial ischaemia, III, 577.  
 occlusions in, cardiac output in, III, 371.  
 physiology and pharmacology of, III, 371.  
 reflex variations of, III, 876.  
 reserve, anoxæmia test of, III, 666.  
 effect on, of deoxycorticosterone and serum transfusions, in dogs, III, 307.  
 of *S-methylisothiourea*, III, 483.  
 of smoking, III, 484.  
 of sodium evipan, III, 482.  
 of viscosity, III, 734.  
 failure of, in acute infection, III, 96.  
 morphological changes in dystrophic period of, III, 296.  
 flow-meter for measuring, III, 863.  
 fetal, and changes after birth, III, 372.  
 forearm, effect of arrest of, and its relation to capillary and venous blood-pressure, III, 870.  
 frog web, demonstration of, III, 667.  
 gaseous exchange between, and lungs, III, 297.  
 heart rate in relation to, in diving seal, III, 800.  
 in hands and feet, effect of drugs on, III, 802.  
 insufficiency of, chronic, pathogenesis and treatment of, III, 204.

**Blood circulation, insufficiency of, motor centres in, III, 300.**  
 orthostatic, III, 578.  
 interruption and restoration of, to lower extremities, III, 373.  
 intracranial, effect of nicotinic acid and derivatives on, in man, III, 203.  
 intrahepatic, III, 734.  
 effect of autonomic nerve stimulation on, III, 579.  
 measurement of, electro-magnetically, III, 13.  
 in arteries and veins with rotameter, III, 579.  
 thermostromuhr method for, III, 802.  
 peripheral, failure of, III, 296.  
 in gynaecology, test for, III, 204.  
 in hyperthyroidism, III, 580.  
 placental, of sheep, III, 525.  
 problems of, III, 200.  
 renal, of domestic animals, III, 513.  
 retention in, of injected serum, III, 869.  
 splanchnic, during posture changes in cats, III, 579.  
 time of, III, 200.  
 measurement of, with  $\alpha$ -lobeline, III, 734.  
 velocity of, III, 579.  
 and basal metabolic rate, III, 97.  
 venous, effect on, of superior mediastinum lesions, III, 666.  
**Blood-corpuscles, agglutination of, by *Staphylococcus aureus* toxin, in rabbits, III, 662.**  
 cultures of, III, 662.  
 destruction and regeneration of, III, 366.  
 effect on, of carbon disulphide, III, 413.  
 lipins in, distribution of, III, 575.  
 mineral constituents of, distribution of, between serum and, III, 438.  
 nicotinic acid in, III, 875.  
 oestrogenic hormone concentration in, III, 12.  
 phosphorylated glycerio acid formation in, III, 730.  
 potassium content of, in wild animals, III, 732.  
 preservation of antigenic specificity of, III, 69.  
 proteolytic digestion of, in spleen, III, 571.  
 red, acid and alkaline phosphatase and nucleophosphatase in, of lower vertebrates, III, 436.  
 agglutination of, effect of vitamin-K on, III, 90.  
 Cabot ring bodies of, origin and nature of, III, 730.  
 carbon dioxide transport in, in dogfish, III, 103.  
 carbonic anhydrase activity within, III, 287.  
 citrated, transfusion with, survival time after, III, 88.  
 count of, dilution fluid for, III, 86.  
 in white rats, III, 509.  
 density of, in relation to corpuscular hæmoglobin concentration, III, 873.  
 distribution and size of, effect of hæmorrhage on, III, 729.  
 effect on, of saponin in chickens, III, 570.  
 electrolyte content and permeability of, in pemphigus, III, 571.  
 elliptic, in man, III, 509.  
 fetal, agglutinogens in, III, 794.  
 fragility of, and leucocyte count, III, 196.  
 hæmolysis of, effect of age on, III, 508.  
 human, osmotic changes in, during storage, III, 662.  
 ionic changes in, in relation to carbonic anhydrase, III, 488.  
 life of, III, 509.  
 linear relationship between, and venous hæmatocrit, determined with radioactive iron, III, 795.  
 living nuclei from, preparation of, in hens, III, 661.  
 membranes of, preparation of, III, 661.  
 osmometric behaviour of, in man, III, 793.  
 osmotic resistance of, effect of X-rays on, III, 339.  
 permeability of, to bromide, iodide, and radioactive chloride, in man, III, 191.  
 to ions, III, 793.  
 to potassium, effect of metabolic poisons on, III, 88.

**Blood-corpuscles, red, physiology and pathology of, III, 508.**  
 postnatal readjustments of, in infants, III, 86.  
 potassium content of, effect of metabolism on, III, 191.  
 radioactive iron for study of, III, 730.  
 respiration of, effect of saponin on, in chicks, III, 661.  
 sedimentation of, III, 508, 870.  
 during menstrual cycle, III, 287.  
 susceptibility of, to hypotonic salt solutions, age effect on, III, 86.  
 to X-rays, in amphibians, III, 571.  
 target, produced by splenectomy and splenic circulation interference, III, 435.  
 transfused, survival of, in man, after storage in preservatives, III, 869.  
 volume of, determination of, by radio-iron, III, 86.  
 rose-Bengal uptake by, mechanism of, III, 793.  
 staining of, with Wright's solution, III, 434.  
 volume of, III, 573.  
 white, count of, III, 435.  
 effect of transfusion on, III, 196.  
 fragility decrease of erythrocytes interfering with, III, 196.  
 in relation to longevity in rats, III, 89.  
 effect on, of pyrimidone, III, 89.  
 of vegetative system, III, 290.  
 eosinophil, in artificial blister in dermatitis herpetiformis, III, 290.  
 neutrophils, maturity of, after supernatant fluid injection from rabbit sterile exudate, III, 797.  
 in rabbits, III, 797.  
 numbers and cell volumes of, in normal human blood, III, 191.  
**Blood diseases, III, 952.**  
 after sulphonamide treatment, III, 162.  
 among blood groups, III, 88.  
 treatment of, with blood transfusion, III, 193.  
 See also Anæmia, Hæmophilia, Leukæmia, etc.  
**Blood-plasma, administration of, III, 869.**  
 albumin in. See under Albumin.  
 amino-acid retention in, in hypoproteinæmic dogs as evidence of impaired liver function, III, 733.  
 anti-insulin effect of, in diabetes, III, 511.  
 ascorbic acid in, in tuberculosis, III, 327.  
 increase of, after vitamin-C ingestion, III, 832.  
 bank, III, 10.  
 bilirubin concentration in, in different vascular territories, III, 92.  
 bovine, ascorbic acid in, effect of gonadotropic substance of pregnant mare's serum on, III, 455.  
 carbon dioxide capacity of, effect of salicylate on, in dogs, III, 337.  
 measurement of, by colorimetry, III, 93.  
 carbon dioxide transport in, in dogfish, III, 103.  
 changes in, after pectin and physiological saline injection in man, III, 869.  
 citrated, clotting and filtration of, III, 368.  
 coagulation of, effect of heparin on, in presence of staphylococci, III, 873.  
 coagulation of, III, 195.  
 by staphylococci, in man, III, 647.  
 factor of, in rabbits, III, 437.  
 time of, III, 437.  
 collection of, III, 663.  
 copper and iron combination in, after ingestion, III, 572.  
 desiccated, for national defence, III, 663.  
 prepared by Adtevac process, treatment with, III, 869.  
 detection in, of prothrombin, III, 573.  
 determination in, of antithrombin, III, 732.  
 of cholesterol, III, 876.  
 of proteins, by sulphosalicylic acid reaction, III, 665.  
 of vitamin-C, III, 156.  
 drying of, III, 794.  
 electrolyte and water exchange between, and muscle, after extracellular electrolyte loss in dog, III, 916.

**Blood-plasma, fibrinogen in.** See under Fibrinogen.

fluidity of, effect of fibrinogen on, III, 732.

globulin in. See under Globulin.

glucose-citrate, stored, treatment with, of surgical shock, III, 91.

human, III, 367.

desiccated, preparation of, III, 368.

electrophoretic measurements on, III, 368.

filtration of, III, 730.

freezing of, in transfusion bottles, III, 510.

production and control of, III, 510.

hypertonic, effect of, on body fluids in animals, III, 730.

lipins in, species variation in, III, 511.

lyophile, treatment with, and sulphathiazole, of diarrhoea in newborn, III, 480.

phenol content and xanthoproteic reaction in, in urea retention, III, 575.

phosphate equilibrium between, and saliva, III, 455.

phospholipins of, effect of diethylstilboestrol on, in birds, III, 812.

preserved, frozen, for transfusions, III, 91.

production and treatment of, at Hamburg slaughterhouse, III, 510.

proteins, formation of, by casein digest intravenously administered, III, 510.

haemoglobin and, interrelation, production, and utilisation of, III, 573.

relation of, to corrected sedimentation rate, III, 732.

prothrombin in, after adrenaline injection, III, 9.

concentration of, and hepatic damage, III, 693.

effect of air currents on, III, 873.

effect of Congo-red on, III, 437.

loss of, exposed to air currents, III, 574.

relation of clotting time to, III, 104.

spin-freezing of, apparatus for, III, 197.

transfusion of, in burns, III, 572.

treatment with, III, 368.

use of, III, 368.

vitamin-A in, comparison of, with liver-vitamin-A, in man, III, 829.

in relation to dark adaptation, III, 886.

in tuberculosis, III, 327.

levels of, after ingestion, in health and disease, III, 93.

vitamin-C in, effect of hyperthermia on, III, 370.

volume of, determination of, Evans-blue method for, III, 10.

**Blood-platelets, count of, III, 872.**

count and coagulation of, III, 291.

effect on, of splenic extracts from purpura, in rabbits, III, 572.

evaluation of, III, 731.

in newborn infants, III, 731.

**Blood-pressure, arterial, effect on, of acetylcholine injection, III, 163.**

of snake venom, III, 169.

level of, as indicator of vasomotor tone, III, 203.

measurement of, in mice, III, 204.

pulse, in relation to arterio-venous oxygen difference, III, 374.

reduction of, by renal extracts, in hypertension, III, 54.

regulation of, in seal during diving, III, 666.

auscultatory methods for, in dogs, III, 513.

cold-pressor test for, III, 52, 373.

response to, in relation to peripheral sensation, III, 373.

colloidal osmotic, in normal and pathological conditions, III, 291.

diastolic and systolic, device for determining and recording, in man, III, 667.

during convulsive therapy, III, 877.

effect on, of adrenaline, injected intravenously and into bone marrow, III, 808.

of cardiazol in man and dog, III, 550.

of *Crotalus terrificus* venom, III, 169.

of deoxycorticosterone acetate, in dogs, III, 595.

of ether anaesthesia, in normal and sympathetomised dogs, III, 513.

**Blood-pressure, effect on, of magnesium bromide, III, 926.**

of sodium nitrite in hypertensive rats, III, 926.

in aged, III, 14.

in children, III, 578.

measurement of, physics of, III, 578.

with plethysmograph, in rats, III, 296.

See also Sphygmomanometry.

of West Indians and Panamanians, III, 295.

reduction of, by renin, in hypertensive dogs, III, 514, 803.

in spinal anaesthesia, III, 166.

with intravenous injection of tissue extracts, III, 667.

with pyrogenic reaction in hypertensive subjects, III, 803.

regulation of, kidney rôle in, in dogs, III, 460.

restoration of, by renin activation, after haemorrhage, III, 879.

venous, action of physiological saline on, effect of time and volume on, III, 296.

antecubital and popliteal, measurements of, during exercise, III, 667.

apparatus for, III, 372.

measurement of, III, 295.

See also Hypertension and Hypotension.

**Blood-serum, acetylcholine-esterase values, in health and disease, III, 512.**

albumin in. See under Albumin.

alkaline phosphatase and inorganic phosphate activity in, in hypophysectomised rats, III, 511.

antigonadotropic, preparations of, neutralisation of follicle-stimulating action of, III, 239.

specificity of, in fowls and mammals, III, 384.

treatment with, gonadal development after, in immature rats, III, 813.

antipneumococcal, treatment with, of meningitis, III, 544.

of peritonitis, III, 335.

antireticular, cytotoxic, curative effect of, III, 291.

effect of, on growth and metamorphosis of amphibia, III, 192.

on human mesenchyme cultures, III, 291.

on tissue-cholesterol, -fatty acids, and -water in rabbits, III, 799.

treatment with, of fractures, III, 192.

of goitre, III, 305.

of schizophrenia, III, 302, 806.

of scleroma, III, 395.

augmentation of, with calcium and phosphate, III, 775.

*Bacillus coli*, antitoxic, treatment with, of colitis, III, 818.

bactericidal property of, effect of urinary oestrogens on, in rabbits, III, 387.

bilirubin in, direct-reacting, III, 799.

calcium in, compared with cerebrospinal fluid-calcium in normal, hyperparathyroid, and hypothyroid states, III, 111.

effect of anterior hypophyseal extract on, III, 27.

cancerous and normal, fission of dipeptides in, III, 250.

capillary and venous, protein content of, in man, III, 874.

cholesterinase in, in rats, III, 93.

cholesterol in, effect on, of oestrogen and pregnancy, in monkey, III, 198.

of thyroidectomy, III, 228.

choline-esterase in, in man and dog, III, 576.

in relation to sex function, III, 875.

coagulation of, Weltmann's, III, 437.

coagulation reaction of, III, 799.

**Blood-serum, colloidal properties of, effect of hydrotropic substances on, III, 775.**

complement in. See under Complement.

concentrated, effect of, in head injuries, III, 289.

containing sulphathiazole, fibroblast growth in, III, 918.

cytotoxic, action of, on mesenchyme, III, 192.

density of, in relation to protein concentration, III, 874.

**Blood-serum, determination in, of "acid" phosphatases, effect of erythrocyte-phosphatase on, III, 11.**

of albumin, density measurement in, III, 368.

of antithrombin, III, 732.

of calcium and oxalate, III, 788.

of cholesterol, III, 876.

of iron, III, 875.

of potassium, III, 864.

of proteins, III, 574, 665.

of *dl*- $\alpha$ -tocopherol, photo-electrically, III, 733.

determination and separation in, of free and combined cholesterol, III, 799.

diastase of, in relation to abdominal disease, III, 895.

dried, for military use, III, 663.

drying of, III, 794.

electrolytes in, III, 438.

enzymes of, hydrolysis of *d*-tripeptides by, III, 776.

origin, fate, and significance of, III, 292.

globulin in. See under Globulin.

$\psi$ -globulin in. See under  $\psi$ -Globulin.

glutathione disappearance in presence of, III, 198.

group A, receptor substances in, interaction between anti-A agglutinins in group B and, III, 193.

group B, anti-A agglutinins in, interaction of, with substances in group A, III, 193.

horse, effect of, on shock in dogs, III, 663.

sensitisation to, with adjuvants, III, 857.

sensitivity to, due to injected antigens, III, 274.

human, III, 367.

agglutinin-inhibiting substance in, III, 367.

detection in, of protective bodies against streptococci, III, 369.

electrophoresis of, effect of carbamide on, I, 297.

filtration of, III, 730.

freezing of, in transfusion bottles, before drying, III, 510.

isoagglutinins in, III, 10.

pooled, for treatment of haemorrhage and shock, III, 10.

preparation of, use of De Laval separator in, III, 197.

preparation and use of, III, 10.

production and control of, III, 510.

$p_H$  in, before and after laparotomy, III, 158.

immune, anti-M and anti-N, preparation of, III, 857.

treatment with, of anaerobic infections, III, 161.

injected, retention of, in circulation, III, 869.

lipase in. See under Lipase.

lipins in, distribution of, III, 575.

in man, III, 576.

magnesium in, in health and disease, III, 438, 799.

mineral constituents of, distribution of, between corpuscles and, III, 438.

non-protein-nitrogen in, III, 438.

normal and pneumococcus-infected, denaturation of, III, 348.

oestrogenic hormone concentration in, III, 12.

osmotic pressure of, after frozen drying and re-dissolution, III, 171.

oxygen uptake by, III, 803.

pathological, proteins susceptible to cold in, III, 576.

pharmacologically-active substances in, III, 709.

pharmacology of, and its use as a blood substitute, III, 663.

phosphorus in, effect of anterior hypophyseal extract on, III, 27.

potassium in, effect of guanidine and prostigmine on, III, 548.

in wild animals, III, 732.

level depression of, by adrenaline, III, 120.

precipitins in, of rabbits immunised against serum-gonadotropin, III, 124.

pregnancy, human, effect of, on rat parturition, III, 134.

- Blood-serum**, pregnancy, mare's, action of cysteine and other reducing agents on, III, 604.  
activity of, effect of amino-group on, III, 604.  
augmentative gonadotropic effect of, on rats, III, 891.  
corticotropic activity in, III, 603.  
effect of, on human ovulation, III, 892.  
gonadotropic activity of, III, 124.  
gonadotropic substance of, effect of, on plasma-ascorbic acid of bovines, III, 465, 750.  
reaction to, near-fatal, III, 691.  
protective activity of, for pneumococci infected mice, treated with sulphapyridine, III, 838.  
proteins, amino-acid content of, in arthritis, III, 9.  
azolesterase in, III, 847.  
blood groups in relation to, III, 290.  
degradation of, III, 542.  
electrophoresis of, III, 368, 775.  
fractionation of, in hyperproteinemia, III, 92.  
genetic effects on, III, 291.  
in therapeutic fever, III, 732.  
protein complexes in heated solutions of, III, 10.  
reactions of, after anti-toxin treatment, III, 179.  
in man, III, 65.  
with Hayem's solution, III, 510.  
removal of lipins from, effect of, on antibody-protein solubility and antibody and antigen reactions, III, 876.  
secretinase in, III, 317.  
separation of, from blood, flask for, III, 367, 510.  
sickness, due to tetanus antitoxin, III, 371.  
spin-freezing of, apparatus for, III, 197.  
thyrotoxic, treatment with, of disturbed thyroid function, III, 305.  
treatment with, of dysentery, III, 769.  
of meningitis, III, 838.  
of pneumonia, III, 47.  
of vascular disease, III, 734.  
ultrafiltrates, in tissue cultures, for fat deposition and virus propagation study, III, 728.  
unsaponifiable matter in, in man, III, 799.  
use of, III, 368.  
vitamin-D in, during and after its ingestion, in man, III, 540.
- Blood-vessels**, coronary, calibre of, action of drugs on, III, 841.  
effect of rays on, III, 930.  
injection techniques for studying, III, 79.  
intestinal, intra-mural course of, in relation to connective tissue strands, III, 876.  
muscle, volume of, effect of acid and alkali on, III, 203.  
of Gasserian ganglion, in man, III, 865.  
permeability of, after irradiation with visible light, III, 340.  
pial and spinal cord, myelinated nerve bundles of, III, 672.  
sclerosis of. See under Sclerosis.  
sensitisation of, to acetylcholine by sympathetic denervation, III, 372.  
small, smooth muscle motor-units in, III, 667.
- Body**, area measurement of small surfaces of, III, 182.  
heat deficit of, recovery from, III, 773.  
malformation of hind end of, III, 725.  
size of, metabolism and, relation between, III, 703.  
weight of, effect of deoxycorticosterone on, in frogs, III, 121.
- Body fluids**, bilirubin in, direct diazo-reaction and photo-electric colorimeter tests for, III, 897.  
determination in, of sulphanilamide and its derivatives, III, 477.  
effect on, of hypertonic plasma, III, 730.  
of intravenous infusions, III, 731.  
electrolytes of, III, 874.  
examination of, for cells, III, 85.
- Body fluids**, extracellular, volume of, determination of, with radioactive sodium, III, 795.  
volume of, effect of anaesthetic agents on, in dogs, III, 769.
- Body water**. See under Water.
- Boeck's sarcoid**, ocular lesions in, III, 519.  
with nodular iritis in child, III, 904.  
with ocular localisation, III, 113.
- Boiling point**, and molecular structure of organic compounds, I, 232.  
of elements, I, 356.  
relation of, to critical pressure and temperature, I, 357.
- Boleophthalmus boddarti***, gas-bladder of, III, 443.
- Bonds**. See Linkings.
- Bone**, abnormalities in, of offspring of rats fed deficient diet, III, 913.  
apatites and apatite-like constituents of, X-ray diffraction study of, III, 900.  
atrophy of, acute. See Osteoporosis.  
with muscular dystrophy, III, 105.  
changes in, in compressed-air workers, III, 879.  
cuboid, development of centre for, in newborn infants, III, 77.  
dermal, development of, in chicks, III, 304.  
latero-sensory canals and, III, 227.  
determination in, of lead, III, 788.  
development of, calcium, phosphorus, and nitrogen retention in relation to, III, 45.  
effect on, of testosterone propionate in normal and castrated rats, III, 128.  
effect on, of calcium- and vitamin-D-deficient diet, in rats, III, 913.  
eosinophilic granuloma of, III, 662.  
fluorine retention and elimination in, III, 247.  
formation of, III, 361.  
mechanical stresses in, III, 566.  
microscopy of, in mammals, III, 569.  
fractures of, compound, effect on, of sulphonamides, III, 546.  
due to low-calcium diets, III, 537.  
phosphatase and vitamin-C in bone substance formation at callus after, III, 821.  
treatment of, with cytotoxic serum, III, 192.  
with phosphoric acid esters, III, 566.  
growth of, effect of arsenic on, III, 828.  
hyperplasias of, reticulo-endothelial, III, 662.  
infections of, and soft tissues, chemotherapy in, III, 706.  
lacuna length and canaliculi in, in mammals, III, 185.  
medullary, changes in, in reproductive cycle of pigeons, III, 565.  
metatarsal, abnormality in, III, 3.  
paraffin sections of, III, 7.  
parietal, enlarged foramina in, with obesity, hyopgenitalism, and microphthalmos, III, 185.  
rachitic, treatment of, with vitamin-D, III, 41.  
regeneration of, effect on, of ascorbic acid, calcium ascorbate, and calcium gluconate, in rats, III, 911.  
strength and size of, in relation to calcium intake, III, 252.  
tissue, regeneration of, III, 361.  
tumours of, phosphatase activity of, in relation to radioactive phosphorus deposition, III, 825.  
See also Cartilage and Epiphyses.
- Bone diseases**, deficiency, in chickens, III, 906.  
due to chronic renal disease, III, 694.  
fibroma, non-osteogenic, III, 616.  
tumours, giant-cell, III, 536.  
treatment of, with X-rays, III, 616.
- Bone-marrow**, absorption of drugs through, III, 8.  
biopsy of, sternal marrow aspiration as method of, III, 436.  
blood infusions into, III, 663.  
changes in, produced by specific antibodies, III, 793.  
culture of, effect on, of sulphonamides, etc., III, 159.  
effect on, of oestradiol and stilboestrol, III, 132.  
of thyroxine in cats, III, 887.  
in anemia, III, 794.  
lymphoid cells of, and lymph nodes of guinea-pigs and rabbits, III, 731.
- Bone-marrow**, Pasteur effect in, III, 703.  
potassium in, isotopic shift of, in man, III, 615.  
X-ray injury to, prothrombin formation after, III, 798.  
response of, to nucleic acid in mice, III, 662.  
sternal, changes in, during first week of life, III, 8.  
smears and sections of, preparation of, III, 8.  
yellow, batyl alcohol and cholesterol from, III, 85.
- Bone salt**, mobilisation of, by parathyroid extract, III, 118.
- Boric acid**. See under Boron.
- Borneol**, and its derivatives, II, 105.  
*iso*Borneol  $\beta$ -glucoside tetraacetate, II, 352.  
*t*-Borneol  $\beta$ -glucoside tetraacetate, II, 352.  
*n*- and *iso*-Borneols, and their esters, II, 233.  
catalytic oxidation of, II, 148.  
*n*- and *iso*-Bornyl methyl ethers, rotation of, II, 369.  
*mono*- and *di*-nitrobenzoates, physical constants of, II, 201.
- Boron compounds**, deficiency of, in plants, III, 862.  
effect of, and of indolylacetic acid on plant growth, III, 424.  
in seeds, III, 949.  
in trees, III, 862.
- Boron tribromide**, ether cleavage by, II, 281.  
*monochloride*, band spectrum of, I, 38.  
*trifluoride*, catalytic action of, II, 245.  
introduction of *tert*-butyl into ethyl acetate by means of, II, 215.  
reactions of, with organic compounds, II, 84, 90.  
*monoxide*, I, 209.  
spectrum of, band, I, 384.  
*trioxide*, crystalline, thermal expansion of, I, 89.  
crystalline and glassy, thermal properties of, I, 88.  
equilibrium of, with beryllium and lithium oxides, I, 398.  
oxides, lower, I, 180.
- Boric acid**, determination of, in presence of acetic acid, I, 408.  
volumetrically, I, 277.  
poisoning by. See under Poisoning.  
solubility of, I, 360.
- Perborates**, formation of, at rotating anodes, I, 178.
- Polyborates**, I, 335.
- Boron organic compounds**, co-ordination, stability of, I, 246.
- Boron determination**—  
determination of, I, 408.  
in soils, I, 307.
- $\beta$ -Boswellianic acid**, methyl ester, II, 148.  
 **$\beta$ -Boswellic acid**, constitution of, II, 60.  
***Bothrops jararaca***, flavin in venom of, III, 902.  
***Botryllus***, bud development of, III, 567.
- Bowels**. See Intestines, large.
- Box**, leaves, coloration of, III, 948.
- Boys**, creatine retention capacity of, in relation to androgen function, III, 752.  
sexually undeveloped, effect of gonadotropic hormone on, III, 29.
- Brachydanio rerio***, karyokinesis in cleavage of, III, 81.
- Brachygraphis episcopi***, reproductive cycle of, III, 129.
- Bracken**, poisoning by. See under Poisoning.
- Brain**, autolysis of, lipin behaviour during, III, 818.  
blood capillaries of, mechanical obstruction of, III, 802.  
carbohydrate metabolism of, with reference to potassium effect, III, 213.  
cerebrosides of, fatty acids from, II, 297.  
changes in, effect of, in maze-learning in rats, III, 674.  
circulation in. See Blood-circulation, cerebral.  
cocaine content of, isolation and spectrographic measurement of, III, 483.  
damage to, from insulin shock, III, 884.  
dentate nucleus in, in man and mammals, III, 108.  
lesions of, in disease of frontal lobes, III, 213.  
development of, choroid plexus and, III, 506.

- Brain**, effect of, on colon irritation, III, 243.  
 effect on, of curare, in frogs, III, 805.  
 of X-rays, III, 930.  
 end, mammalian, histology of, III, 17.  
 fissural pattern in, in negroes and whites, III, 659.  
 fixing in one piece with spinal cord, device for, III, 16.  
 fore, axis of, in macaque and man, III, 507.  
 fore- and mid-, electrical stimulation of, autonomic response to, in relation to pupil, III, 588.  
 function of, intercellular electric fields in relation to, III, 300.  
 Galen's block in, tolerance of, against intravenous pressure, III, 204.  
 heat narcosis of, in frogs, III, 805.  
 lesions in, pyramidal, in monkeys, III, 214.  
 thiamin deficiency in relation to, III, 909.  
 metabolism of, III, 585.  
 effect on, of diagnostic treatment, III, 110.  
 microtome sectioning of, freezing of tissues for, III, 85.  
 of highly talented individuals, III, 301.  
 olfactory reactions in, in hedgehogs, III, 516.  
 olivary bodies in, changes in, after cerebellar injury, III, 161.  
 superior, lesions of, in relation to auditory function, III, 212.  
 olivary nucleus in, in man and mammals, III, 108.  
 oxidation in, effect of insulin on, III, 122.  
 peduncles, mammillary, origin of, in cats, III, 446.  
 phosphatide of, inositol in, III, 585.  
 phospholipin formation by, III, 738.  
 pretectal region of, in rabbits, III, 882.  
 red nucleus in, in man and mammals, III, 108.  
 lesions in, III, 738.  
 respiration of, effect on, of 2:4-dinitrophenol in rats, III, 834.  
 of iodoacetate and malonate, in rats, III, 834.  
 respiratory enzyme systems of, in cyanide and azide poisoning, III, 107.  
 senile plaques in, III, 110.  
 stem, neon-ray irradiation of, III, 219.  
 structure and function of, in new-born bear, III, 517.  
 subcortical lesions in, apparatus for inflicting, in rats, III, 109.  
 sulphathiazole applied to, epilepsy after, III, 806.  
 suspensions, metabolism of, III, 518.  
 thalamo-cortical connexions of, in rats, III, 109.  
 tissues, emboli of, in foetal lungs, III, 218.  
 glycolytic activity of, effect of insulin on, III, 302.  
 metabolism of, effect of insulin on, III, 302.  
 vascular affections of, fundi in, III, 23.  
 vascularisation in, of reptiles, III, 513, 725.  
 volume changes in, during anaesthesia, III, 372.  
 See also Cerebellum, Cerebrum, Head, and Skull.
- Brain diseases**, abscess, and paradoxical embolism, associated with heart disease, III, 111.  
 production of, in cats, III, 587.  
 cortical metabolism in relation to, III, 214.  
 jaundice, III, 378.  
 of frontal lobes, dentate nuclei lesions in, III, 213.  
 traumatic, vertigo due to effort at visual attention in, III, 884.  
 tumours, artificial, production of, III, 17, 533.  
 macroglia in, III, 303.  
 third ventricle, III, 303.  
 treatment of, with X-rays, III, 339.  
 See also Meningitis, Parkinsonism, etc.
- Brain extracts**, glycolysis and phosphorylation in, III, 157.
- Bran**, effect of, on faecal composition, III, 30.  
 **$\beta$ -Brass**, rigidity modulus of crystals of, I, 47.  
**Brassica**, seeds, effect of, in diet, on rats, III, 306, 309.  
**Brassica oleracea**, heteroauxin and tetraphoid shoot production by callus method in, III, 867.
- Bread**, brown and white, mineral metabolism of man on, III, 619.  
 National wholemeal, determination in, of vitamin-B<sub>1</sub>, III, 620.  
 nutritive value of, III, 403.  
 poisoning from. See under Poisoning.  
 white and whole wheat, biological value and digestibility of, comparison of, III, 905.
- Breast**, cancer of. See under Glands, mammary.  
 feeding, study of, III, 526.  
 filariasis of, III, 526.  
 male, hypertrophy of, III, 390.  
 proliferation of, with reference to cystic disease, III, 691.  
 supernumerary, relation between, and labour, III, 313.
- Breathing**. See Respiration.
- Brescia**, Sudbury, Ontario, I, 345.
- Breienediolone**, and its diacetate, II, 201.
- Brein**, constitution of, II, 201.
- Brieneonol-A and -B**, and their acetates, II, 201.
- Bright's disease**. See Nephritis.
- Brimeura amethystina**, root development from leaf cuttings of, II, 861.
- Broccoli**, calcium of, utilisation of, III, 906.
- Bromates**. See under Bromine.
- Brome grass**. See *Bromus inermis*.
- Bromelin**, preparation and uses of, III, 555.
- Bromides**. See under Bromine.
- Bromination of 1:4-diketones**, II, 176.  
 of hydrocarbons, II, 69.
- Bromine**, addition of, to ethylene derivatives, I, 243.  
 adsorption of, by graphite, I, 202.  
 atomic field of, I, 30.  
 at. wt. of, I, 78.  
 distribution of, after tribromoacetaldehyde, tribromoacetic acid, and tribromoethanol treatment in cats, III, 924.  
 isotopes, of mass 82, radiations from disintegration of, I, 34.  
 radioactive, I, 4.  
 from uranium fission, I, 34.  
 $\gamma$ -ray transition of, I, 256.  
 isotopic exchange between carbon tetrabromide and, I, 24.  
 nuclear isoxerides of, I, 78, 163.  
 photochemical reaction of, with chloral, I, 273.  
 $\beta$ -rays from, I, 312.  
 reactions of, oxygen effect in, II, 70.  
 with carbon tetrachloride, I, 306.  
 with tetrachloroethylene, I, 306.
- Hydrobromic acid**, adsorption of, by silica gel, I, 171.  
 breakdown potentials in, I, 8.  
 polarisability and internuclear distance in, I, 351.  
 self-diffusion of, I, 168.  
 solubilities of, in carbon tetrachloride and chloroform, I, 54.  
 triple-point pressure of, I, 139.
- Bromides**, determination of, as pentabromorosaniline, I, 374.  
 determination of, in blood, III, 576.  
 in blood and urine, III, 864.  
 in organic material, III, 76.  
 in presence of chlorides, I, 248.  
 in presence of halides, I, 248.  
 volumetrically, with mercuric nitrate and diphenylcarbazide, I, 181.  
 effect of, on thyroid, III, 807.  
 excretion of, after bromine injection, III, 54.  
 intestinal absorption of, fluid-circuit theory applied to, III, 529.  
 poisoning by. See under Poisoning.  
 soluble, determination of, apparatus for, I, 378.
- Bromates**, determination of, in presence of cupric salts, I, 339.  
 reduction of, at dropping mercury electrode, I, 303, 399.
- Hypobromous acid**, dissociation constant of, I, 367.
- Bromine determination**—  
 determination of, in cerebrospinal fluid, III, 741.  
 in organic compounds, II, 243.  
 microchemically, I, 276.
- Bromocresol-green**, dissociation constant of, in water, I, 62.
- Bromoform**, reaction of, with bromine, I, 365.  
 spectrum of, infra-red, I, 44.  
 vapour pressure of, I, 321.
- Bromophenol-blue**, alkaline fading of, I, 148.
- Bromopierin**, spectrum of, Raman, I, 315.
- Bromosulphalein**, excretion of, in bile, III, 32, 610.
- Bromus inermis*, composition and growth of, III, 357.
- Bronchi**, cavity healing in, occlusion in relation to, III, 443.  
 lumen of, influence of suggestion on size of, III, 443.
- Bronchiectasis**, history of, III, 298.  
 See also under Kartagener's triad.
- Bronchopneumonia** in girls' school, III, 494.
- Brucella**, agglutinating properties of anti-sera for, III, 64.  
 infection of chick embryos with, III, 346.  
 isolation of, from human brucellosis, III, 346.
- Brucella abortus*, infection by, relation of, to vitamin-A content of foetal livers, III, 538.  
 treatment of, with M. & B. 693 in mice, III, 410.
- Brucellosis**, diagnosis and treatment of, III, 64, 478.  
 isolation of *Brucella* from, in man, III, 346.  
 skin tests in, III, 64.  
 treatment of, with sulphaguanidine, III, 919.
- Brucine**, resolution of bromoalkanes with, II, 214.
- Buffer solutions**, maximum capacity of, I, 328, 367.
- Bufo arenarum*, colour change in, neuro-endocrine mechanism of, III, 810.  
 water metabolism of, III, 258.
- Bufotalan-3-one**, 2:14-dihydroxy-, II, 323.
- Bufotalatriene**, 3:14-dihydroxy-, and its acetate, II, 323.  
 $\alpha$ - and  $\beta$ -Bufotalenes, II, 323.  
 $\alpha$ - and  $\beta$ -Bufotalene glycols, II, 323.
- Bufotalin**, constitution of, II, 322.
- Bufotoxin**, and its derivatives, II, 323.
- Bufotoxinone**, II, 323.
- Bulbocapnine**, action of, in spinal animals, III, 483.  
 on stomach movements of rabbits, III, 708.  
 catalepsy from, effect of insulin shock on, III, 586.
- Bulbus oculi**. See Eye-balls.
- Bulls**, seminal fluid studies in, III, 455.
- Bunte salts**, use of, in synthesis, II, 162.
- Burettes**, micro-, I, 213, 250, 281.  
 evaporation of solutions from tips of, I, 412.  
 tapless, with stock bottles, I, 187.  
 precision calibration of, I, 281.  
 weight-, for organic analysis, II, 243.
- Burns**, chemical coagulants for, III, 840.  
 cutaneous, III, 532.  
 effect of, III, 140.  
 granulating areas of, antiseptic emulsions for, III, 840.  
 nervous factor in, III, 668.  
 plasma transfusion in, III, 572.
- Bursitis**, subacromial, treatment of, with X-rays, III, 338.
- Butadiene**, spectra of, absorption, and of benzene and hexatriene, I, 134.
- Butadiene**, hexachloro-, I, 387.
- $\Delta^2$ -Butadiene**,  $\alpha$ -amino-, derivatives, diene syntheses with, II, 406.
- Butane**, catalytic dehydrogenation of, II, 213.  
 compressibility of mixtures of, with methane, I, 140.  
 reaction of, with chlorine and sulphur dioxide in ultra-violet light, II, 245.  
 viscosity of, I, 357.
- Butane**, chloro-derivatives, dielectric properties, supercooling, and vitrification of, I, 289.  
 halogen-derivatives, spectra of, Raman, I, 41.  
 $\alpha$ - and  $\alpha\delta$ -dithiocyno-, II, 245.
- isoButane**, bromination of, II, 69.  
 equilibrium of, with methane, I, 367.  
 sulphochlorination of, II, 296.  
 viscosity of, I, 357.
- Butanes**, free energies and equilibria of isomerisation of, I, 175.

- Butanes,  $\beta$ -dichloro-, formation of, from  $\gamma$ -chlorobutan- $\beta$ -ols, II, 72.  
*n*- and *iso*-Butanes, dissociation of, by electron impact, I, 404.  
*cyclo*Butane, b.p., olefine content, and vapour pressure of, II, 243.  
 preparation of, and its vapour pressure, II, 83.  
 Butane- $\alpha$ -diol, *d*initrate, II, 216.  
 Butane- $\alpha$ -diol, arsenite, II, 343.  
 Butane- $\alpha$ -disulphonic acid, amide and anilido, II, 245.  
*n*-Butane- $\alpha$ -disulphonic acid, and its *n*-toluidine salt, II, 129.  
 derivatives of, II, 245.  
 Butane- $\alpha$ - and - $\beta$ -sulphoniccyclohexylamides, II, 245.  
 Butane- $\alpha$ - and - $\beta$ -sulphonyl chlorides, II, 245.  
*iso*Butane- $\alpha$ -sulphonyl chloride, II, 296.  
 Butane- $\alpha\beta$ -triol, dicarbanilide, II, 216.  
 Butane- $\alpha\beta$ -triol, tricarbanilide, II, 216.  
 Butan- $\alpha$ -ol,  $\beta$ -*di*bromo-, and its acetate, II, 295.  
 Butan- $\beta$ -ol, optically active, action of hydrogen fluoride, phosphoric acid, and sulphuric acid on, II, 294.  
 Butan- $\beta$ -ol,  $\alpha$ - and  $\gamma$ -*di*bromo-,  $\alpha$ -*di*chloro-,  $\alpha$ -chloro- $\gamma$ -bromo-, and  $\gamma$ -chloro- $\alpha$ -bromo-, and their acetates, II, 295.  
 Butan- $\beta$ -ols,  $\gamma$ -chloro-, conversion of, into  $\beta$ -*di*-chlorobutanes, II, 72.  
 Butanone,  $\alpha$ -*di*bromo-, and  $\gamma$ -chloro- $\alpha$ -bromo-, II, 295.  
 Butene. See Butylene.  
*iso*Butene. See  $\Delta^2$ -Butylene.  
 $\Delta^4\beta$ -Butenolides,  $\beta$ -substituted, of indene and naphthalene series, II, 405.  
 2-*sec*-Butenylnaphthalene, II, 305.  
*Butia capitata*, pigments from fruit of, II, 303.  
 Butine. See Butinene.  
 $\Delta^4$ -Butinene, spectrum of, Raman, I, 227.  
 Butoxyacetylene, II, 214.  
 Butoxybenzoic acids,  $\beta$ -alkylaminoethyl esters, hydrochlorides, II, 404.  
 5-*n*-Butoxybenzothiazole, 6-nitro-, II, 153.  
 $\beta$ -Butoxyethylene,  $\alpha$ -bromo-, II, 214.  
 $\gamma$ -Butoxyethyl- $\alpha$ - $\beta'$ -phenylethyl-*n*-butyric acid, amide, II, 78.  
*p*-Butoxymethoxynitrobenzene, II, 361.  
 $\gamma$ -Butoxymethyl-*n*-butyric acid, amide, II, 78.  
 Butrin, constitution of, II, 6.  
 Butter fat, English, vitamin-*D* content of, III, 764.  
 Butter-yellow, choline-like effect of, III, 757.  
 metabolism of. See under Metabolism.  
 tumours induced by, in rats, III, 398.  
 Butterflies, wing-pigments of, II, 33, 152.  
 Butyl alcohol, formation of, by fermentation, III, 345.  
 miscibility of, with water, I, 323.  
*iso*Butyl alcohol, mixtures of water and, I, 267.  
*iso*Butyl alcohol,  $\beta$ -amino-, reaction of, with  $\alpha$ -ethylhexaldehyde, I, 282.  
*sec*-Butyl alcohol, equilibrium of, with water, I, 329.  
*tert*-Butyl alcohol, mixtures of, with *isobutene* and water, I, 99.  
 Butyl alcohols, magnetic susceptibilities of, I, 232.  
*n*- and *iso*-Butyl alcohols, separation of, from hydrocarbons by azeotropic distillation, II, 127.  
*n*-Butyl bromide, reaction of, with sodium salts of *n*-butyl mercaptan, phenol, and thiophenol, I, 243.  
 mercaptan. See *n*-Butylthiol.  
 nitrate, II, 215.  
*tert*-Butyl chloride, mixtures of, with carbon tetrachloride, I, 145.  
 reaction of, with toluene, catalysed by hydrogen fluoride, I, 244.  
 hypochlorite, chlorination with, II, 72.  
 nitrate, reactions of, with alkali hydroxide and with water, I, 401.  
 3-*tert*-Butylacenaphthene, and its picrate, II, 429.  
 3-*tert*-Butylacenaphthenequinone, II, 429.  
*iso*Butylacetic acid, salts, electrolysis of, with nitrates, II, 277.  
 $\alpha$ -*tert*-Butylacetoacetic acid, *tert*-butyl ester, II, 215.  
*n*-Butylamine, aminolysis of ethyl phenylacetate in, I, 106.  
 thermal decomposition of, I, 207.  
 $\beta$ -Butylamino*iso*butyl alcohols, and their *p*-nitrobenzoates, II, 283.  
 $\beta$ -*sec*-Butylaminoethyl alcohol, and its picrate, II, 394.  
 4-Butylaminophenylphosphinic acids, 3-amino-, and 3-nitro-, II, 122.  
 $\beta$ - $\alpha'$ -Butylamylaminoethyl alcohols, and their picrates, II, 394.  
 $\alpha$ -*iso*Butylisocamylideneaminoethyl alcohol, II, 394.  
 Butylamylmalonic acids, diethyl esters, II, 247.  
*tert*-Butylbenzene, reaction of, with bromine in presence of oxygen, II, 70.  
*p*-Butylbenzenesulphonamides, II, 136.  
*p*-*tert*-Butylbenzenesulphonyl chloride, II, 136.  
*p*-*n*-Butylbenzoic acid, II, 258.  
*n*-Butylboron, oxidation of, I, 400.  
*iso*Butyl *sec*-butyl ketone, II, 131.  
*n*-Butyl-*sec*-butylmalonic acid, diethyl ester, II, 247.  
 5-*tert*-Butyl-3-chloromethyl-2-quinonemethide, II, 397.  
*n*-Butyldocosanes, II, 125, 341.  
 2-*n*-Butyl-*n*-eicosylnaphthalene, II, 85.  
*iso*Butylene. See  $\Delta^2$ -Butylene.  
 $\Delta^8$ -Butylene, addition of sulphur dioxide to, I, 301.  
*cis*- $\Delta^8$ -Butylene, b.p., olefine content, and vapour pressure of, II, 243.  
 $\Delta^8$ -Butylenes,  $\beta$ -*di*chloro-, stereoisomeric, dipole moments of, I, 84.  
 $\Delta^2$ -Butylene, catalytic dimerisation of, by copper sulphide, II, 293.  
 critical constants and vapour pressure of, I, 233.  
 equilibrium of, with *tert*-butyl alcohol and water, I, 99.  
 hydration of, in dilute nitric acid, I, 401.  
 photochemistry of, I, 151.  
 sulphonation of, II, 73.  
 synthesis of, from acetylene and hydrogen, II, 213.  
 vapour, compressibility and equation of state of, I, 233.  
 $\beta$ -Butylene thiocarbonate, II, 132.  
*cyclo*Butylene, preparation of, and its vapour pressure, II, 83.  
 $\beta$ -Butylene glycol, in bacterial fermentation, III, 851.  
 9-Butylfluorene-9-carboxylic acid, and its butyl ester, II, 247.  
 2-*n*-Butylfuran, 2- $\gamma$ -amino-, and its derivatives, II, 373.  
*n*-Butyl- $\beta$ -*d*-glucoside,  $\delta$ -chloro-, and  $\delta$ -iodo-, and their derivatives, II, 134.  
 $\beta$ -*iso*- and *tert*-Butylglucosides, II, 351.  
*n*-Butyl- $\beta$ -*d*-glucoside- $\delta$ -sulphonic acid, ethyl ester, and its tetra-acetate, II, 134.  
 5-*tert*-Butylhemimellitol, and *trinitro*-, II, 85.  
 Butyl-*n*-hexadecylmalonic acid, dibutyl ester, II, 247.  
 5''-Butylhexahydrocannabinol, II, 236.  
*n*-Butylhexylamine, and its hydrochloride, II, 288.  
 Butylhexylaminomethyl-6-methoxy-4-quinolyl-carbinol, and its diplicate, II, 288.  
 4-Butylhydantoins, II, 271.  
 16-*iso*Butylidene- $\Delta^4$ -androsterone, 3:17-*di*hydroxy-, diacetyl derivative, II, 413.  
*sec*-Butylmalonic acid, disec-butyl ester, II, 247.  
 2-*sec*-Butylnaphthalene, II, 305.  
 4-*tert*-Butylnaphthalic acid, derivative of, II, 429.  
 $\gamma$ -6-*sec*-Butyl-2-naphthyl- $\Delta^8$ -pentenoic acid, II, 305.  
 $\gamma$ -6-*sec*-Butyl-2-naphthylvaleric acid, II, 305.  
 4-*sec*-Butylphenol, 2:6-*di*chloro-, and its phenylurethane, II, 283.  
 6-*sec*-Butylphenol,  $\alpha$ -naphthyl- and phenylurethanes, II, 258.  
*p*-*n*-Butylphenyl methyl ketone, and its derivatives, II, 258.  
 5-*tert*-Butylisophthalaldehyde, 2-hydroxy-, II, 314.  
 4-*sec*-Butylisophthalic acid, II, 398.  
 4- and 5-*tert*-Butylisophthalic acids, and their dimethyl esters, II, 398.  
 16-*tert*-Butyl- $\Delta^5$ -pregnen-3( $\beta$ )-ol-20-one, and its acetate, II, 322.  
 16-*tert*-Butylprogesterone, II, 322.  
 5-*n*-Butylpyrimidine, 2-amino-, 2-amino-4:6-*di*-hydroxy-, and 4:6-*di*chloro-2-amino-, II, 151.  
 5''-Butyl-3':4':5':6'-tetrahydrocannabinol, II, 236.  
*n*-Butylthiol, sodium salt, reaction of, with *n*-butyl bromide, I, 243.  
 $\alpha$ -Butylthiolbenzoic acid,  $\beta$ -butylaminoethyl esters, hydrochlorides, II, 404.  
 3'-*tert*-Butyl-1:7'-thionaphthenacenaphthényl-indigo, II, 429.  
 $\beta$ -Butyramidopropionic acid,  $\beta$ - $\gamma'$ -hydroxy-, sodium salt, II, 250.  
*n*-Butyric acid, 2:6-*di*chlorophenyl ester, II, 283.  
 esters, oxidation of, by rat liver slices, glycogen effect on, III, 475.  
 lead diphenyl salt, II, 241.  
 methylcyclohexyl and tolyl esters, saponification of, I, 243.  
 Butyric acid,  $\alpha$ -amino-, formation of, from *l*-glutamic acid, II, 4.  
 (*l*)- $\alpha$ -amino-, II, 74.  
 $\alpha$ -amino- $\beta$ -hydroxy-. See *d*-Threonine.  
 $\gamma$ -chloro-, butyl ester, II, 3.  
 $\alpha$ -hydroxy-, lead diphenyl salt, II, 241.  
 $\beta$ -hydroxy-, ratio of, to acetoacetic acid in ketosis, III, 475.  
*iso*Butyric acid,  $\beta$ -bromo-, methyl ester, II, 287.  
 Butyric acids, electrolysis of, propane and propylene formation in, I, 273.  
*d*-erythro- and *threo*-*n*-Butyric acids,  $\alpha$ -amino- $\beta$ -*di*hydroxy-, and their derivatives, II, 189.  
 Butyroacetic acid, ethyl ester, Pechmann condensation of, with phenols, II, 374.  
 Butyrolactones,  $\gamma$ -substituted, II, 257.  
 Butyrophenone, 3:5-*di*chloro-4-hydroxy-, II, 283.  
 Butyryl chloride, hydrolysis of, I, 369.  
 $\alpha$ -Butyrylacetoacetic acid, ethyl ester, preparation of, and its enol-determination and fission, II, 347.  
 3-*n*- and *iso*-Butyrylpyrenes, II, 50.  
 C.  
 CTAB. See Cetyltrimethylammonium bromide.  
 Cabbages, Maine, ascorbic acid in, III, 653.  
 raw, chopping and mincing of, ascorbic acid disappearance after, III, 702.  
 Cabbage juice, determination in, of vitamin-C biologically and chemically, III, 912.  
 Cacao husks, toxicity of, and their influence on toxicity of caffeine, III, 772.  
 Cacao trees, leaves, assimilation and transpiration in, III, 73.  
 Cadalene, synthesis of, II, 27.  
 Cadinine, structure of, II, 233.  
 Cadmium atoms, excited, photo-sensitisation by, I, 372.  
 crystals, orientation of, in eutectic melts with zinc, I, 358.  
 structure of, I, 11.  
 spectrum of, spark, I, 221.  
 thermal energy of, I, 226.  
 Cadmium alloys with copper, catalytic action of, I, 333.  
 with gold, structure of, I, 18.  
 with mercury, spectra of, I, 1.  
 with zinc, eutectic, potential of, I, 268.  
 Cadmium compounds, poisoning by. See under Poisoning.  
 Cadmium salts, determination of complex ions in solutions of, I, 174.  
 Cadmium bismuth oxybromides and oxychlorides, crystal structure of, I, 260.  
 fluorapatite, I, 246.  
 monofluoride, spectrum of, absorption, I, 385.  
 halides and sulphide, activation of, I, 273.  
 hydroxide, hydrated, precipitation of, I, 328.  
 hydroxyapatite, I, 246.  
 iodide, heats of solution of, in alcohols, I, 298.

- Cadmium oxide**, crystal structure of melts of bismuth oxide and, I, 136.  
 phosphate, I, 246.  
 sulphates, I, 328.  
 sulphide, photo-effect in absorption of phthalins by, I, 108.  
**Cadmium determination** :—  
 determination of, in presence of copper, I, 278.  
 in zinc, I, 154.  
**Cæcitis**, ulcerative, treatment of, with sulphaguanidine, III, 480.  
**Cæcum**, movements of, inhibition of, by carbon dioxide and oxygen inhalation, III, 607.  
**Cæsium**, radioactive barium isotopes from, I, 35.  
 spectrum of, I, 285.  
 spark, I, 309.  
**Cæsium chloride**, vapour pressure of saturated aqueous solutions of, I, 141.  
 tetraiodide, molecular formula of, I, 197.  
 polyiodides, I, 197.  
 sulphate, activity coefficient of, in aqueous solutions, I, 239.  
**Cafestanetriol acetate**, II, 199.  
**Cafesterol**, constitution of, and its derivatives, II, 198, 371.  
**Caffeine**, as poison to parasympathetic, III, 303.  
 effect of, on fatigue, III, 773.  
 on liver, III, 529.  
**Cahnite**, crystal structure of, I, 219.  
**Caisson disease**, III, 375.  
**Calciferol**. See Vitamin-D<sub>2</sub>.  
**Calcification**, ossification and, III, 565.  
**Calcite**, crystal orientation and Raman spectrum of, I, 387.  
 crystal structure of, I, 86.  
 heat of formation of, I, 367.  
 Magdalena, New Mexico, I, 348.  
 spectrum of, Raman, I, 387.  
**Calcium**, at. wt. of, I, 311.  
**Calcium alloys**, with strontium, structure of, I, 294.  
**Calcium compounds**, absorption of, effect of protein intake on, III, 906.  
 from intestines, III, 143.  
 assimilation of, effect of orange juice on, in relation to teeth, III, 911.  
 balance of, in laying birds, III, 827.  
 in young women on self-chosen diets, III, 827.  
 deficiency of, in growing rats, III, 405.  
 deposition of, in heart and kidneys of rats, III, 373.  
 effect of, on coagulation time, in hæmoptysis, III, 89.  
 on dietary fluorine assimilation, III, 405.  
 on lead metabolism, III, 468.  
 on normal and parathyroidectomised dogs, III, 635.  
 in blood. See under Blood.  
 in blood coagulation, III, 196.  
 in blood-serum. See under Blood-serum.  
 in broccoli and cauliflower, utilisation of, III, 906.  
 in cerebrospinal fluid. See under Cerebrospinal fluid.  
 in diet of adults, III, 906.  
 in urine, Sulkowitch test for, III, 695.  
 metabolism of. See under Metabolism.  
 requirement of, for cattle, III, 760.  
 for man, III, 537.  
 for man and utilisation of calcium of milk, III, 537.  
 retention of, in infants, effect of honey on, III, 326.  
 in relation to growth and osseous development, III, 45.  
 in relation to nitrogen retention, III, 326.  
 serum-. See under Blood-serum.  
**Calcium salts**, mixed precipitates from solutions of aluminium salts and, I, 274.  
 relation of, with proteins, III, 775.  
 treatment with, of tetany, III, 685.  
**Calcium aluminate**, crystal structure of, I, 11, 166.  
 arsenate, hydrolysis of, I, 274.  
 arsenates, I, 373.  
 bismuth oxybromides and oxychlorides, crystal structure of, I, 291.  
**Calcium carbide**, free energies of reactions of, I, 64.  
 specific heat of, at low temperatures, I, 138.  
 carbonate, solubility of, in tropical sea-water, I, 169.  
 spectrum of, infra-red, I, 212.  
 carbonate and hydrogen carbonate, dissociation of, I, 145.  
 caseinogenate, solutions, III, 775.  
 chromate, synthesis and decomposition of, I, 152.  
 thermal decomposition of mixtures of, with its oxide, carbonate, ferric oxide, or chromio oxide, I, 152.  
 with magnesium oxide, I, 152.  
 with strontium oxide, I, 152.  
 ferrites, hydrated, paramagnetism of, I, 291.  
 nitrate, equilibrium of, with strontium nitrate and water, I, 330.  
 oxide (*lime*), equilibrium of, with aluminium, iron, and silicon oxides, I, 330.  
 reaction of, with roasted kaolin in aqueous solutions, I, 245.  
 permanganate, action of hydrogen sulphide on, I, 70.  
 phosphate, sedimentary deposits of, I, 215.  
 solubility of, I, 324.  
 phosphates and silicophosphates, formation and structure of, I, 356.  
 silicate, equilibrium of, with sodium aluminium silicates, I, 330.  
 mineral. See Rankinite.  
 silicates, I, 273.  
 mixtures of potassium silicates with, I, 23.  
 sulphate, sulphur chlorides prepared from, I, 374.  
 thermal transition of, I, 25.  
 thiosulphate, preparation of, and its stabilisation, I, 334.  
**Calcium organic compounds** :—  
 Calcium cyanamide, crystal structure of, I, 390.  
**Calcium determination** :—  
 determination of, as picrolonate, I, 211.  
 in bile, III, 244.  
 photo-electrically, III, 788.  
**Calculi**, urinary, carbonate-apatite and hydroxy-apatite in, III, 694.  
 occurrence of, in oestrogen-treated mice, III, 525.  
 xanthine, in urinary tract, III, 532.  
 See also Gallstones.  
**Calgon**. See Sodium hexametaphosphate.  
**Callus**, formation of, effect of sex hormones on, III, 893.  
**Calorimeters**, adiabatic, low temperature, I, 185.  
 for high temperatures, I, 116.  
 heat-conduction, I, 155.  
**Calorimetry**, electrical, demonstration experiment on, I, 282.  
 temperature correction in, I, 73, 341.  
**Calotropis**, digitalis-like principles of, compared with other cardio substances, III, 630.  
 resin from, II, 43.  
**Calsamate**, action of, compared with acetylsalicylic acid, III, 483.  
**Calsoy**, soya bean milk substitute, III, 699.  
**Calumba root**, alkaloids of, II, 385.  
**Calves**, magnesium in, III, 906.  
**Cambarus clarkii**, effect of eyestalk removal on, III, 462.  
**Cambarus immutis**, viability and ecdysis in, influence of sinus gland on, III, 323.  
**Camellia thea**, non-fermenting tea plant, III, 359.  
**Cameras**, for crystal structure, I, 116.  
 X-ray powder, I, 27.  
**Camphane**, 2,3-dihydroxy-, II, 369.  
**Camphanes**, dihydroxy-, and their derivatives, II, 200.  
**Camphane series**, II, 59.  
**Camphanecarboxylic acids**, II, 369.  
**isoCamphanols**, physical constants of, II, 201.  
**Camphene**, and  $\omega$ -nitro-, physical constants of, and their derivatives, II, 201.  
**Camphene series**, inactivation in, II, 265.  
**Camphenilaldehyde**, physical constants of, II, 201.  
**Camphenilane**, physical constants of, II, 201.  
**Camphenilol II**, physical constants of, and its derivatives, II, 201.  
**Camphenilone**, physical constants of, and its derivatives, II, 201.  
**dl-Campholide**, dibromo-, II, 141.  
**Camphor**, and its derivatives, II, 105.  
 association of, with phenol and cresols, I, 22.  
 diethylamides of, II, 178.  
 formation of, from borneols, II, 148.  
 synthesis of, from camphene-pine mixtures, II, 59.  
 from pinene, II, 233.  
**Camphor**,  $\alpha$ -hydroxy-, isomeric, and their semicarbazones, II, 200.  
**d-Camphor**, crystals, molecular rotation in, I, 356.  
 rotation of acids, anhydrides, and lactones derived from, II, 286.  
**dl-Camphor**,  $\alpha\alpha$ -dibromo-, II, 141.  
**epiCamphor**, dibromo-, and its 2,4-dinitrophenylhydrazone, II, 416.  
**Camphor group**, syntheses in, II, 286.  
**dl-Camphorenic acid**, and bromo-, II, 141.  
**Camphoric acid**, ethyl ester, bismuth salt, treatment with, of syphilis, III, 843.  
**Camphoric acid sec.- and tert.-semialdehydes**, and their derivatives, II, 324.  
**"isoCamphorphorone"**, constitution of, II, 228.  
**Camphorquinone**, catalytic reduction of, II, 200, 369.  
**10-Camphorthiol-p-benzoquinols**, II, 24.  
**10-Camphorthiol-p-benzoquinones**, II, 24.  
**Canada balsam**, substitute for, synthetic resin as, III, 287.  
**Cancer**, III, 466, 534.  
 antigens and, III, 617.  
 biology of, in man, III, 403.  
 bladder. See under Bladder.  
 bronchiogenic, associated with pulmonary asbestosis, III, 536.  
 Brown-Pearce, growth of, in eyes of immunised rabbits, III, 151.  
 causes and conditions determining, III, 463.  
 ceruminous gland. See under Glands.  
 cervix. See under Uterus.  
 chemistry of, III, 902.  
 chemotherapy of, III, 251.  
 decarboxylation in tissue in, III, 325.  
 development of, III, 397, 463, 612.  
 chemical configuration and, III, 463.  
 effect of ultra-violet light and other procedures on, III, 696, 757.  
 endocrine system in relation to, III, 614.  
 epidermal, from methylcholanthrene, osteosis cutis in, in mice, III, 902.  
 in mouse skin, by methylcholanthrene application, III, 396.  
 nutrition in, III, 823.  
 oestrogenic hormones in, III, 823.  
 diagnosis of, III, 759.  
 diet in, III, 537.  
 effect on, of vitamin-C, glutathione, and hydrogen peroxide, in mice, III, 325.  
 Fallopian tube. See under Fallopian tube.  
 gastric. See under Stomach.  
 gastrointestinal, hepatic concentration of vitamin-A in, III, 465.  
 genital. See under Genitals.  
 growth of, effect of potassium on, III, 904.  
 prevention of, by vitamin and yeast injection, III, 698.  
 hepatic. See under Liver.  
 heredity as determining type, site, and age of occurrence of, III, 324.  
 human, prevention, control, and treatment of, as deficiency disease, III, 324.  
 hyperleukocytosis in, III, 904.  
 induction of, by chemicals, III, 396.  
 glucose injections in relation to, III, 902.  
 irradiated, human biopsy material from, III, 616.  
 islet cell, functioning of, with metastases to liver, III, 826.  
 islets of Langerhans. See under Pancreas.  
 lip. See under Lips.  
 liver. See under Liver.  
 liver extract from cases of, sarcomas produced by, III, 248.



- Cancer, lung.** See under Lunga.  
metastasis of, from breast to prostate, bone reaction to, III, 698.  
*d*-peptidase in serum in, in man, III, 325.  
polypeptide-hydrolysing polypeptidases in serum and urine in, III, 250.  
potassium in, isotopic shift of, in man, III, 615.  
precancerous areas in rectum mucosa removed for, III, 466.  
radiation, III, 904.  
research in, III, 615, 904.  
genetics in, III, 615.  
sex organs. See under Genitals.  
test for, Prager, and serum ultrafiltrates, III, 904.  
testis. See under Testicles.  
tissue of, biocatalysts in, III, 825.  
transplantable, treatment of, effect of combining bacterial toxins and X-ray irradiation in, III, 534.  
transplanted, papilloma virus in, III, 697.  
treatment of, slow neutrons for, III, 616.  
with X-rays, III, 486.  
uterine. See under Uterus.  
vulva. See under Vulva.
- Candida albicans*, dissociation of, by immune sera and lithium chloride, III, 556.  
*Candida albicans* and *stellatoidea*, green pigment from, III, 422.  
*Canis majoris*, spectroscopy of, I, 222, 254.  
Cannabidiol, structure of, II, 236.  
Cannabinol, compounds like, II, 111.  
from marihuana resin, III, 771.  
*Cannabis indica*, II, 110, 202.  
See also Marihuana.  
*Cannabis sativa*, resin, tetrahydrocannabinol from, II, 179.  
Cannabiscetin, and its derivatives, II, 109.  
Cannabiscitrin, II, 109.  
constitution of, II, 48.  
Cannizzaro reaction, II, 131, 299.  
*Cantharellus cibarius*, constituents of, III, 425.  
Cantharides, assay of, III, 637.  
Cantharidine, structure of, II, 142.  
Cantonese, adult, male, heights and weights of, III, 432.  
Capillary layer, liquid structure in, I, 325.  
Capsules, formation of, III, 65.  
*Carassius auratus*, digestive tract of, III, 189.  
*Carassius morosus*, growth and development of, III, 532.  
Carbamic acid, benzyl ester, condensation of, with aldehydes and  $\alpha$ -keto-acids, II, 76.  
Carbamic acid, *N*-dichloro-, chlorination of, II, 217.  
esters, preparation of, II, 188.  
reactions of, II, 269.  
Carbamide, crystal structure of, additive compound of hydrogen peroxide and, I, 87.  
dipole moment and structure of, I, 388.  
hydrolysis of, I, 243.  
reaction of, with phenylglyoxal, II, 379.  
saccharinate, II, 335.  
spectrum of, Raman, I, 289.  
See also Urea.  
Carbamides, molecular compounds of, II, 280.  
4(5)-Carbamidoglyoxaline-5(4)-carboxylic acid, and its methyl ester, and its hydrochloride, II, 237.  
Carbamidomethylenemalononic acid, diethyl ester, II, 331.  
Carbamidophenylalanine-*N*-acetic acid, dimethyl ester, II, 425.  
4-Carbamylbenzyl alcohol, II, 174.  
1-Carbamyl-4-carbomethoxy-3(5)-methylpyrazole-5(3)-propionic acid, methyl ester, II, 426.  
Carbamylcholine chloride, treatment with, of glaucoma simplex, III, 589.  
4-Carbamylidiphenyl-4'-arsenoxide, II, 337.  
 $\gamma$ -Carbamyl- $\gamma$ -diphenyl-*n*-butyric acid, and its ethyl ester, II, 226.  
9-Carbamylfluorene, 9-amino-, II, 273.  
6-Carbamyl-2-naphthylarsenoxide, II, 337.  
3-Carbamyl-3-phenylphthalimidine, II, 379.  
1-Carbamylpyrazol-5-one-3-propionic acid, and its methyl ester, II, 426.  
Carbazole, derivatives, hydrogenation of, II, 115.  
synthesis of, Graebe-Ullmann, II, 424.
- Carbazole, equilibrium of, with 2:4:6-trinitrotoluene, I, 398.  
organo-metallic compounds of, II, 114.  
Carbazole, 1- $\omega$ -bromoamino-, acetyl derivative, II, 425.  
tetrachloro-, II, 217.  
3- $\omega$ -chloroamino-, acetyl derivative, and 3- $\beta$ -chloroamino-, propionyl derivative, II, 63.  
3-mono- and 3:6-di-cyano-, and 1- and 3-nitro-, II, 424.  
Carbazoles, compounds of, with quinones, II, 377.  
Carbazoles, 1-substituted, II, 424.  
Carbazole-3:6-dicarboxylic acid, and 1-nitro-, and their ethyl esters, II, 424.  
S-Carbomethoxy dithiocarbamate and trithiocyanurate, II, 36.  
5-Carbomethoxy-3-acetyl-4-methylpyrrole-2-carboxylic acid, II, 427.  
2-Carbomethoxybenzofuran-1-carboxylic acid, II, 107.  
*p*- $\alpha$ -Carbomethoxybenzyltriphenylacetic acid, ethyl ester, II, 13.  
4-Carbomethoxy-5:4'-*di*bromomethyl-3'- $\alpha$  $\beta$ -tribromoethylpyrromethene, 5'-bromo-3-hydroxy-, hydrobromide, II, 207.  
11-Carbomethoxy-12-carboxy-6:7-dicarboxylic acid, anhydride, II, 142.  
5-Carbomethoxy-1:4-dimethyl-2-bromomethylpyrrole-3-propionic acid, ethyl ester, II, 330.  
2-Carbomethoxy-5:6-dimethylisocoumaranone, 3-bromo-4-hydroxy-, and its acetate, II, 267.  
6-Carbomethoxy-3:4-dimethylcoumarin, 7:8-dihydroxy-, II, 202.  
5-Carbomethoxy-3':5'-dimethylpyrroketone-4-propionic acid, 3:4-dichloro-, II, 204.  
 $\alpha$ -5-Carbomethoxy-2:4-dimethyl-3-pyrrolacrylic acid, and its methyl ester, II, 380.  
 $\alpha$ -5-Carbomethoxy-2:4-dimethyl-3-pyrrolpropionic acid, II, 380.  
 $\gamma$ -Carbomethoxy- $\gamma$ -diphenyl-*n*-butyric acid, II, 226.  
 $\alpha$ -Carbomethoxy- $\alpha$ -*n*-dodecyl- $\gamma$ -butyrolactone, II, 151.  
 $\alpha$ -Carbomethoxy- $\gamma$ -ethyl- $\Delta^{\alpha}$ -*n*-hexenoic acid, ethyl ester, II, 133.  
 $\alpha$ -Carbomethoxy- $\alpha$ -*n*-hexadecyl- $\gamma$ -butyrolactone, II, 151.  
2-Carbomethoxycyclohexanone-2- $\kappa$ -undecic acid, II, 283.  
 $\gamma$ -2-Carbomethoxy-2-cyclohexanonyl-*n*-butyric acid, ethyl ester, and its 2:4-dinitrophenylhydrazide, II, 95.  
1-Carbomethoxycyclohexyl-*n*-butyric acid, 2-hydroxy-, ethyl ester, II, 95.  
 $\alpha$ -Carbomethoxy- $\beta$ -*p*-methoxyphenylpentane- $\epsilon$ -carboxylic acid,  $\beta$ -hydroxy-, lactone, II, 57.  
2-Carbomethoxy-4-methylbenzofuran-1-carboxylic acid, and its dimethyl ester, II, 107.  
2-Carbomethoxy-4-methylbenzofuran-1:2-dicarboxylic acid, II, 107.  
Carbomethoxymethyl- $\beta$ -carbomethoxy-*n*-propylamine, II, 287.  
6-Carbomethoxy-4-methylcoumarin, 7:8-dihydroxy-, II, 202.  
2-Carbomethoxy-3-methyl-*di*-(3-carbomethoxy-2:4-dimethyl)tripyrrolmethene, 4-bromo-, and its perchlorate, II, 207.  
6-Carbomethoxy-4-methyl-3-ethylcoumarin, 7:8-dihydroxy-, II, 202.  
 $\beta$ -Carbomethoxy- $\beta$ -methylglutaric acid, ethyl ester, II, 130.  
4-Carbomethoxy-3(5)-methylpyrazole-5(3)-propionic acid, methyl ester, II, 426.  
5-Carbomethoxy-4-methylpyrrole-2-carboxylic acid, 3-bromo-, II, 330.  
 $\alpha$ -Carbomethoxy- $\alpha$ -methylvaleric acid,  $\delta$ -bromo-, ethyl ester, II, 53.  
 $\alpha$ -Carbomethoxy- $\alpha$ -*n*-octyldecyl- $\gamma$ -butyrolactone, II, 151.  
6-Carbomethoxy-4-phenylcoumarin, 7:8-dihydroxy-, II, 202.  
4-Carbomethoxy-1-phenyl-3(5)-methylpyrazole-5(3)-propionic acid, methyl ester, II, 426.  
 $\beta$ -1-Carbomethoxy-2-piperidylpropanaldehyde diethyl acetal, II, 38.  
 $\beta$ -Carbomethoxy-*n*-propylamine, and its picrate, II, 287.  
2-Carbomethoxythiol-4-methylthiazole, II, 36.
- 4'-Carbomethoxy-5:3':5'-trimethyl-4'-ethylpyrromethene, 3-hydroxy-, II, 207.  
4-Carbomethoxy-1:3:5-trimethylpyrrole, 2-bromo-, II, 272.  
 $\beta$ -5-Carbomethoxy-1:2:4-trimethyl-3-pyrrolacrylic acid, II, 330.  
 $\beta$ -5-Carbomethoxy-1:2:4-trimethyl-3-pyrrolpropionic acid, II, 330.  
 $\delta$ -Carbomethoxy-*n*-valeraldehyde, and its 2:4-dinitrophenylhydrazide, II, 324.  
Carbimides, II, 280.  
Carbinols, acetylenic, decomposition of, II, 246.  
*N*-Carbomethoxy-*d*-alanine, II, 77.  
 $\alpha$ -Carbomethoxyamidocinnamic acid, II, 76.  
 $\alpha$ -Carbomethoxyamido- $\alpha$ -hydroxyglutarylactone, II, 76.  
 $\alpha$ -Carbomethoxyamido- $\beta$ -phenylpropionic acid, II, 76.  
Carbomethoxybenzylideneimine, II, 76.  
Carbomethoxyglycyl-*d*-leucine, II, 77.  
*N*-Carbomethoxy-*d*-leucylhydrazide, II, 77.  
Carbomethoxy-*d*-phenylalanine, II, 77.  
*N*-Carbomethoxy-*d*-phenylalanyl-*d*-leucine, methyl ester, II, 77.  
2-Carbobutoxyaminophenol, 4-bromo-, II, 119.  
Carbocyanines, containing 2:4-benzthiazine nucleus, II, 182.  
Carbohydrates, acetylation of, in pyridine, II, 350.  
as pathogenic agents, III, 756.  
characterisation of, II, 248.  
combustion of, after glucose administration in man, III, 915.  
dietary, absorption and digestion of, effect of vitamin supplements and whole yeast on, III, 828.  
excessive intake of, in aetiology of diabetic coma, III, 409.  
level of, effect of hormones on, in chicks, III, 746.  
metabolism of. See under Metabolism.  
mobilisation and storage of, in rats, III, 766.  
models of, I, 318.  
nutritional value of, III, 251.  
reactions of, with chlorites, II, 47.  
rotation of, I, 388.  
sulphates of, II, 79.  
treatment with, of diabetes with liver disease, III, 694.  
4-Carbohydrazido-3(5)-methylpyrazole-5(3)-propionhydrazide, and its dianisylidine derivative, II, 426.  
Carbolfuchsin, staining of bacteria with, III, 851.  
2-Carbomethoxyaminophenol, 4-bromo-, II, 119.  
5-Carbomethoxy-2-butyl-3-methyl- $\Delta^2$ -cyclopentenone, II, 363.  
2-Carbomethoxy-3-diazoacetylpyridine, II, 114.  
 $\gamma$ -Carbomethoxy- $\gamma$ -diphenyl-*n*-butyric acid, II, 226.  
2-Carbomethoxy-7-methoxy-2-methylhexahydro-1-phenanthrylacetic acid, 1-hydroxy-, methyl ester, II, 263.  
2-Carbomethoxy-7-methoxy-2-methylhexahydro-1-phenanthrylideneacetic acid, methyl ester, II, 262.  
2-Carbomethoxy-9-methoxy-2-methyl-*s*-octahydrophenanthrene-1-acetic acid, 1-hydroxy-, methyl ester, II, 230.  
 $\beta$ -2-Carbomethoxy-9-methoxy-2-methyl-*s*-octahydro-1-phenanthrylpropionic acid, methyl ester, II, 230.  
2-Carbomethoxy-6-methoxy-2-methyl-1:2:3:4-tetrahydro-1-naphthylacetic acid, and its methyl ester, II, 176.  
 $\beta$ -2-Carbomethoxy-6-methoxy-2-methyl-1:2:3:4-tetrahydro-1-naphthylpropionic acid, methyl ester, II, 176.  
6-Carbomethoxy-4-methylcoumarin, 7:8-dihydroxy-, II, 202.  
6-Carbomethoxy-4-methyl-3-*n*-propylcoumarin, 7:8-dihydroxy-, II, 202.  
5-Carbomethoxy-4-methyl-2-isopropyl-3-methyl- $\Delta^2$ -cyclopentenone, II, 363.  
 $\beta$ - $\beta'$ -Carbomethoxypropionoxycrotonic acid, ethyl ester, II, 426.  
6'-Carbomethoxy-1:3:6-trimethyl-2:5-diethyltripyrrol-2' $\alpha$ 4' $\beta$ -diene-4-propionic acid, 1'-hydroxy-, methyl ester, II, 334.

- 6'-Carbomethoxy-1:3:6-trimethyl-2:5-diethyl-tripyrnyl-2'-ene-4-propionic acid, 1'-hydroxy-, methyl ester, II, 334.**
- 6'-Carbomethoxy-1:3:6-trimethyl-2:5-diethyl-tripyrnyl-5'-ene-4-propionic acid, 1'-hydroxy-, methyl ester, II, 334.**
- 6'-Carbomethoxy-1:3:6-trimethyl-2-ethyl-5-bromovinyltripyrnyl-2'-ene-4'- $\beta$ -diene-4-propionic acid, 1'-hydroxy-, methyl ester, II, 334.**
- Carbon, activated, surface diffusion of carbon dioxide in, I, 295.**
- atoms, distances between, I, 389.
- valency angle of, I, 84, 196, 317.
- at. wt. of, I, 255, 311.
- colloidal, cataphoretic mobility of, I, 61.
- crystal structure of, I, 198.
- cycle of, in stars, I, 192.
- heat of sublimation of, I, 134, 257.
- isotopes, I, 255.
- radioactive, as indicator of carbon dioxide assimilation, III, 266, 269, 420.
- tracer studies with, II, 299.
- isotope 13, preparation of, I, 26.
- protons from deuteron bombardment of, I, 33.
- isotopic weights of, I, 127.
- particles, light absorption by, I, 9.
- light scattering by, I, 196.
- reaction of, with steam, I, 150.
- recoil electrons from, by  $\gamma$ -rays from fluorine, I, 382.
- spectrum of, I, 384.
- band, I, 163.
- sublimation temperature of, I, 49.
- trivalent, II, 13.
- yield of neutrons from deuterons on, I, 382.
- Carbon tetrabromide, isotopic exchange between bromine and, I, 24.**
- tetrachloride, administration of, fatty acid utilisation after, III, 318.**
- dielectric constant of, I, 158.
- equilibrium of, in mixtures with *tert.*-butyl chloride, I, 145.
- fumes, uræmia after exposure to, III, 927.
- hepatomas induced in mice by, III, 398.
- hippuric acid synthesis after, in rats, III, 927.
- narcosis after exposure to, III, 260.
- particle data in stearic acid solutions in, I, 361.
- poisoning by. See under Poisoning.
- reaction of, with bromine, I, 306.
- treatment with, effect of light on rabbit liver after, III, 318.
- monohydride, spectrum of, I, 313.**
- suboxide, reaction of, with proteins, II, 241; III, 292.**
- monoxide, adsorption of, on glass plates, I, 170.**
- after-burning of, I, 24.
- asphyxia. See under Asphyxia.
- b.p. and dew point of, mixed with nitrogen, I, 358.
- combustion of, in presence of copper chromite, I, 333.
- condensations with, and hydrogen fluoride, II, 344.
- decomposition of, by ferromagnetic materials, I, 271.
- determination of, with pyrogallol-tannic acid, I, 72.
- dissociation energy of, I, 384.
- flame speed of, I, 101.
- flames of oxygen and, I, 101.
- flames of ozone and, I, 101.
- oxidation of, catalytically, on manganese dioxide, I, 271.
- poisoning by. See under Poisoning.
- reaction of, with nitrogen dioxide, I, 147.
- recovery of, X-ray effect in, III, 880.
- reduction of zinc oxide by, I, 99.
- spectrum of, absorption, infra-red, I, 225.
- Raman, I, 289.
- triple-point pressure of, I, 139.
- dioxide, absorption vessel for, I, 250.**
- alveolar, measurement of, instrument for, III, 442.
- assimilation of, in cell-free liver extracts, III, 623.
- Carbon dioxide, blood transport of, in dogfish, III, 103.**
- in fresh-water fishes, III, 581.
- compressibility of mixtures of, with hydrogen and nitrogen, I, 90.
- concentration of, in expired air, III, 735.
- determination of, volumetrically, with zinc amalgam, I, 276.
- effect of, on man under high pressure, III, 514.
- equilibrium of, in mixtures with potassium oxide, silica, and water, I, 174.
- fixation of, by pigeon liver in pyruvic acid dissimilation, III, 318.
- generator for, I, 119.
- inhibition of caecal and gastric peristalsis by, in rabbits, III, 607.
- Joule-Thomson effect in, I, 233.
- reduction of, I, 102.
- respiration of, by decapitated body having cardiac nerves cut, III, 736.
- spectrum of, band, I, 38, 131.
- Raman, I, 289.
- surface diffusion of, in activated carbon, I, 295.
- ultrasonic velocity in, I, 232.
- underground, origin of, I, 216.
- utilisation of, indicated by radioactive carbon, III, 266, 269, 420.
- viscosity of, under pressure, I, 140.
- oxides, equilibrium of, with nickel and its oxide and with nickel and aluminium oxide, I, 240.
- disulphide, effect of, on blood corpuscles, III, 413.**
- effect of absorption of, in industry, III, 638.
- mental symptoms after absorption and poisoning by, III, 927.
- miscibility of, with acetone, I, 19.
- with methyl acetate, I, 201.
- poisoning by. See under Poisoning.
- solubility of, in body fluids and tissues, III, 417.
- spectrum of, absorption, ultra-violet, I, 39.
- band, ultra-violet, I, 38.
- Raman, I, 132.
- Carbonic acid, ionisation constant of, I, 99.**
- kinetics and thermochemistry of, I, 104.
- Carbonates, detection of carbon and sulphur dioxides from mixtures of, with sulphites, I, 113.**
- determination of, I, 113.
- apparatus for, I, 378.
- mineral, heats of formation of, I, 367.
- occurrence of, in coal seams, I, 76.
- Carbon determination:—**
- determination of, combustion apparatus for, II, 338.
- with Van Slyke-Folch oxidation mixture, II, 338.
- Carbon black, structure of, X-ray, I, 318.**
- suspensions, spectrum of, absorption, I, 56.
- Carbon-carbon linkings, rotation of, I, 267.
- strength of, I, 258.
- Carbon-deuterium linkings, predissociation of, I, 131.**
- Carbon-hydrogen linking, dipole moment of, I, 387.**
- hydrogen bonds in, I, 54.
- predissociation of, I, 131.
- spectrum of, and structure, I, 225.
- strength of, I, 258.
- Carbonic anhydrase, III, 776.**
- action of, effect on, of glutathione, III, 641.
- on blood-corpuscles, III, 488.
- activation of, III, 847.
- activity of, within red blood corpuscles, III, 287.
- content of, and of zinc compounds in tissues of vertebrates, III, 847.
- determination of, in kidneys, III, 460.
- in ocular tissues, III, 680.
- preparation of, crystalline, III, 488.
- purification of, III, 847.
- Carbonyls, determination of, by electrometric titration, II, 339.**
- metallic, I, 247, 337, 373.
- organo-metallic, I, 336, 337.
- Carbonyls, cyano- and halogeno-derivatives, formation and stability of, I, 210.**
- Carbonyl chloride, hydrolysis of, I, 369.**
- poisoning by. See Poisoning, phosgene.
- compounds, addition and condensation reactions of, I, 149.
- aliphatic, sterically hindered, II, 348, 393.
- aromatic, II, 309.
- Raman spectra of, I, 288.
- bridge, II, 318.
- catalytic reduction of, II, 348.
- condensation of, with amides, II, 76.
- cyclic, catalytic hydrogenation of, II, 26.
- determination of, in bile preparations, III, 394.
- formation of, by enzymic oxidation of unsaturated fatty acids, II, 277.
- identification of, by means of hydantoins, II, 271.
- isolation of, produced during tissue hydrolysis, III, 901.
- metallic, stability and properties of, I, 110.
- oxidation with, II, 299.
- prototropic changes of, I, 149.
- reactions of, with formamide, II, 350.
- condensation of, with amides, II, 76.
- unsaturated, reactivity of, II, 420.
- groups, reactivity of, II, 315.
- sulphide, m.p.-pressure curve of, I, 89.
- molecular structure of, I, 313.
- sound absorption in, and its mixtures, I, 49.
- spectrum of, Raman, I, 165.
- Carbonyl-Grignard reaction, resonance and, II, 142.**
- 4:7-endo Carbonyl-4:5:6:7-tetraphenyl-8:9-dihydroindene, and its dibromide, II, 253.**
- 4:7-endo Carbonyl-4:5:6:7-tetraphenyl-2:3:8:9-tetrahydroindene, II, 253.**
- 2-Carboxopropoxyaminophenol, 4-bromo-, II, 119.**
- N-Carboxycyclopropoxy-N<sup>1</sup>-cyclopropylcarbamide, II, 83.**
- "Carboxypyridine." See Pyridine, 2: $\omega$ -p-diamino-, 2-benzoyl derivative.**
- Carborundum, electrokinetic properties of, I, 297.**
- Carbostyryl, 4-amino-, II, 378.**
- 2-N<sup>4</sup>-Carboxyacetylsulphanilamidoguanidine, and its ethyl ester, II, 428.**
- 2-N<sup>4</sup>-Carboxyacetylsulphanilamidopyrimidine, and its ethyl ester, II, 428.**
- 2-N<sup>4</sup>-Carboxyacetylsulphanilamidothiazole, and its ethyl ester, II, 428.**
- 2-p- $\beta$ -Carboxyacrylamidobenzenesulphonamidopyridine, II, 31.**
- 8- $\beta$ -Carboxyacrylamido-6-methoxyquinoline, II, 31.**
- 2-N<sup>4</sup>- $\beta$ -Carboxyacrylylsulphanilamido-5-ethyl-4-thiazolone, II, 428.**
- 2-N<sup>4</sup>- $\beta$ -Carboxyacrylylsulphanilamidoguanidine, II, 428.**
- 2-N<sup>4</sup>- $\beta$ -Carboxyacrylylsulphanilamidothiazole, II, 428.**
- 2- $\epsilon$ -Carboxyamyl-3-methyl-4<sup>2</sup>-cyclopentenone, and its methyl ester, II, 363.**
- 4'-o-Carboxybenzamidodiphenylsulphone, 4-amino-, II, 140.**
- p-Carboxybenzeneazo- $\beta$ -naphthyl acetate, II, 139.**
- 2-N<sup>4</sup>-o-Carboxybenzoylsulphanilamidoguanidine, II, 428.**
- 2-N<sup>4</sup>-o-Carboxybenzoylsulphanilamidothiazole, II, 428.**
- p- $\alpha$ -Carboxybenzyltriphenylacetic acid, and its ethyl ester, II, 18.**
- 2-N<sup>4</sup>- $\gamma$ -Carboxy-n-butylsulphanilamidothiazole, II, 429.**
- 5'-Carboxy-4-carbomethoxy-5:4'-dimethyl-3'- $\omega$ -bromovinylpyrromethene, 3-hydroxy-, II, 207.**
- Carboxycyanides, cyano- and halogeno-derivatives, formation and stability of, I, 210.**
- 2-Carboxy-1:4-dimethoxy-5:6-dimethylcoumarone, 3-bromo-, II, 267.**
- $\gamma$ -Carboxy- $\gamma\gamma$ -diphenyl-n-butyric acid, esters, II, 226.**
- ll-S-( $\beta$ -Carboxyethyl)homocysteine, S- $\beta$ -amino-, formation of cysteine from, by liver tissue, III, 623.**
- synthesis of, and its replacement of cystine in diet, II, 190.

- 4'-Carboxyformamidodiphenylsulphone, 4-amino-, II, 140.
- Carboxyhydroxymethylamides, reaction of, with hydroxy-compounds, II, 194.
- Carboxyl groups, determination of, in cellulose and its derivatives, II, 352.
- Carboxylase, bacterial and yeast, inhibition of, by sulphonamide drugs, III, 850.
- carbon dioxide reduction by, III, 269.
- yeast. See under Yeast.
- Carboxylation, II, 215, 393.
- $\gamma$ -2-Carboxy-6-methoxy-3:4-dihydro-1-naphthyl-n-butyric acid, II, 263.
- 4-Carboxymethoxyhippuric acid, 3:5-diiodo-, II, 283.
- 2-Carboxy-9-methoxy-2-methyl-*s*-octahydro-phenanthrene-1-acetic acids, and their esters, II, 230.
- anti*-2-Carboxy-9-methoxy-2-methyl-*s*-octahydro-phenanthrylidene-1-acetic acid, and its esters, II, 230.
- syn*-2-Carboxy-9-methoxy-2-methyl-*s*-octahydro-phenanthrylidene-1-acetic anhydride, II, 230.
- $\gamma$ -2-Carboxy-6-methoxy-1:2:3:4-tetrahydro-1-naphthyl-n-butyric acid, II, 262.
- 4-Carboxymethylaminophenylphosphinic acid, 3-nitro-, II, 122.
- $\alpha$ -1-Carboxy-3- and -4-methylcyclohexyl- $\beta$ -phenylpropionic acids, and their derivatives, II, 259.
- 2-Carboxymethyl-3-methyl- $\Delta^2$ -cyclopentenone, and its semicarbazone, II, 363.
- $\alpha$ -1-Carboxy-3-methylcyclopentyl- $\beta$ -phenylpropionic acid, II, 259.
- 6-Carboxy-2-naphthylarsenic acid, II, 337.
- 3-Carboxynaphthyl-2-thioglycollic acid, II, 327.
- 2-N<sup>4</sup>- $\beta$ -Carboxy-n-nonoylsulphanilamidothiazole, II, 429.
- $\alpha$ -1-Carboxycyclopentyl- $\beta$ -phenylpropionic acid, and its derivatives, II, 259.
- $\alpha$ -1-Carboxycyclopentylpropionic acid, and its derivatives, II, 259.
- 4-Carboxyphenoxyacetic acid, 2:6-dichloro-, II, 283.
- 6-Carboxyphenoxyacetic acid, 2:4-dichloro-, II, 258.
- 4-Carboxyphenylacetic acid, 2:6-dinitro-, and its dimethyl ester, II, 358.
- 3-Carboxy-3-phenylphthalide, derivatives of, II, 379.
- 2-*p*- $\beta$ -Carboxypropionamidobenzenesulphonamidopyridine, II, 31.
- 8- $\beta$ -Carboxypropionamido-6-methoxyquinoline, and its methyl ester, II, 31.
- N*- $\beta$ -Carboxypropionyl-5-ethoxy-*N*-ethyl-*m*-4-xylylidine, II, 138.
- N*- $\beta$ -Carboxypropionyl-5-ethoxy-*N*-methyl-*m*-4-xylylidine, II, 138.
- N*- $\beta$ -Carboxypropionyl-*N*-ethyl-3-bromomesidine, and its resolution, II, 138.
- N*- $\beta$ -Carboxypropionyl-5-methoxy-*N*-ethyl-*m*-4-xylylidine, II, 138.
- N*- $\beta$ -Carboxypropionyl-5-methoxy-*N*-methyl-*m*-4-xylylidine, and its resolution, II, 138.
- 2-N<sup>4</sup>- $\beta$ -Carboxypropionylsulphanilamido-5:5-diethyl-4-thiazolone, II, 428.
- 2-N<sup>4</sup>-Carboxypropionylsulphanilamido-5-ethyl-4-thiazolone, II, 428.
- 2-N<sup>4</sup>- $\beta$ -Carboxypropionylsulphanilamidognanine, II, 428.
- 2-N<sup>4</sup>- $\beta$ -Carboxypropionylsulphanilamido-4-methylpyrimidine, II, 428.
- 2-N<sup>4</sup>- $\beta$ -Carboxypropionylsulphanilamidopyrimidine, II, 428.
- 2-N<sup>4</sup>- $\beta$ -Carboxypropionylsulphanilamidothiazole, II, 428.
- N<sup>4</sup>- $\beta$ -Carboxypropionylsulphon-*p*-sulphamyl-anilide, II, 428.
- N<sup>4</sup>- $\beta$ -Carboxypropionylsulphon-*p*-2'-thiazolylsulphamylanilide, II, 428.
- $\gamma$ -2-(4-Carboxyquinolino)- $\beta$ - $\beta$ -dimethylbutyric acid, II, 331.
- 3:4'-Carboxy-2'-quinolyldibenzthiophen, II, 62.
- 6'-Carboxy-1:3:6-trimethyl-2:5-diethyltripyrnyl-2' $\alpha$ :4' $\beta$ -diene-4-propionic acid, 1'-hydroxy-, methyl ester, II, 333.
- 6-Carboxy-1:3:6-trimethyl-2-ethyl-5-bromovinyl-tripyrnyl-2' $\alpha$ :4' $\beta$ -diene-4-propionic acid, 1'-hydroxy-, methyl ester, II, 334.
- N<sup>4</sup>- $\delta$ -Carboxy-n-valerylulphanilamidoguanidine, II, 429.
- 2-N<sup>4</sup>- $\delta$ -Carboxy-n-valerylulphanilamidopyridine, II, 429.
- 2-N<sup>4</sup>- $\delta$ -Carboxy-n-valerylulphanilamidopyrimidine, II, 429.
- 2-N<sup>4</sup>- $\delta$ -Carboxy-n-valerylulphanilamidothiazole, II, 429.
- Carcasses, preparation of, for analysis, III, 502.
- Carcinides*, heart of, action of acetylcholine on, III, 800.
- Carcinogenesis. See Cancer, development of.
- Carcinogenics, action of, III, 397.
- on hepatic vitamin-A stores in mice and rats, III, 757.
- on small organisms, III, 397.
- agent for, without condensed ring structure, III, 533.
- azo-dyes, split products of, effect of, on melanin formation, III, 902.
- cholesterol-methylcholanthrene pellets, III, 613.
- endogenous production of, in man, III, 758.
- factors, tissue examination for, III, 148.
- hydrocarbon, additive effects of, III, 757.
- analysis of, spectrographically, III, 822.
- choleic acids of, III, 398.
- effect of, and derivatives on autoxidation of oils, III, 398.
- on immunity reactions, III, 148.
- excretion of, in bile, III, 251.
- induction of pulmonary tumours by, III, 696.
- preparation of dispersions of, in serum, III, 148.
- solubilities of, in water, I, 170.
- thiocyanation of, III, 10.
- in lipins, tumour induction in rats by, III, 396.
- in tobacco, III, 614.
- lymphoid tissue changes in mice treated with, III, 36.
- medicine and, III, 149.
- methylcholanthrene, III, 613.
- oestradiol, III, 614.
- phospholipin oxidation inhibition by, III, 35.
- survey of, III, 399.
- theelin, III, 614.
- See also under Metabolites.
- Carcinoma. See Cancer.
- Carcinus moenas*, growth of, III, 363.
- populations of, metric variations in, III, 695.
- Cardiazol, anaesthetic steroid hormones and, antagonism between, III, 770.
- convulsions from, curare and scopolamine premedication in, III, 20.
- effect on, of sedative drugs, III, 110.
- prevention of, glycine in, III, 585.
- effect of, on blood pressure in man and dog, III, 550.
- on blood-glucose, -lactate, and -pyruvate, III, 293.
- treatment with, duodenal ulcer after, III, 816.
- of schizophrenia, III, 379.
- of Stokes-Adams syndrome, III, 441.
- shock, death from, III, 217.
- diabetes after, III, 889.
- of schizophrenia, III, 675.
- traumatic complications of, quinine methochloride for prevention of, III, 881.
- subconvulsive, III, 379.
- use of  $\beta$ -erythroidine hydrochloride in, III, 20.
- Cardiography, pharmacological action of contrast media for, III, 637.
- Cardiospasm, and ulcer pepticum oesophagi, III, 894.
- treatment of, with prostigmine, III, 317.
- Cardiovascular disease. See under Diseases.
- Cardiovascular system, effect on, of fluids intravenously administered, III, 801.
- of hyperventilation, in relation to aviation, III, 876.
- of vitamin-B complex syrup in pregnancy, III, 441.
- of American roentgenologists over 45 years of age, III, 877.
- Cardophyllin. See Ethylene-theophylline.
- dl*- $\Delta^4$ -Carene, synthesis of, from piperitone, II, 416.
- Cargegieite-nephelite-pseudowollastonite-wollastonite, I, 380.
- $\alpha$ -Carinæ, spectrum of, I, 310.
- Carmine, for marking faeces, III, 754.
- Carnosine, action of, on intestines, III, 375.
- action on, of bromine, II, 32.
- Carnosol, III, 563.
- and its derivatives, II, 242.
- Carnot cycle, calculation of efficiency of, I, 357.
- space model of, I, 206.
- Carotene, content of, in colostrum, III, 829.
- in human liver, III, 31.
- determination of, III, 153.
- in plants, III, 405.
- hunger for, in cattle, III, 153.
- in relation to animal nutrition, III, 469, 760.
- in vegetables, vitamin-A value of, III, 253.
- physiological value of, compared with vitamin-A, III, 469.
- preparations of, as vitamin-A substitutes, III, 327.
- stability of, tocopherol in relation to, III, 914.
- utilisation of, by rats, effect of  $\alpha$ -tocopherol on linoleic and linolenic ester action on, III, 41.
- effect of fats and unsaturated fatty acids on, III, 761.
- $\beta$ -Carotene, absorption of, by vitamin-A-deficient rats, III, 699.
- analysis of, and its isomerisation, III, 787.
- determination of, in fruits and vegetables, III, 699.
- spectrophotometrically, II, 388.
- neo- $\beta$ -Carotene, determination of, spectrophotometrically, II, 388.
- Carotene series, syntheses in, II, 137.
- Carotenoids, III, 787.
- biologically active, and vitamin-A, III, 327.
- determination of, in faeces, III, 457.
- excretion of, by man, III, 700.
- in green algae, III, 180.
- in vitamin-A determination, III, 153.
- isomerisation of, II, 130.
- photosynthesis of brown cells in reaction of, with chlorophyll, I, 25.
- plant, stereoisomeric, III, 655.
- polyenic, analogues of, synthesis of, II, 224.
- surface chemistry of, I, 142.
- Carotenoid series, syntheses in, II, 126, 163, 175.
- Carotid, internal, cervical portion of, aneurysms of, III, 506.
- occlusion of, neurologic symptoms after, III, 213.
- reflexes of, chemical and mechanical, origin site of, III, 667.
- Carotid body, III, 667.
- hypercapnic and hypoxic stimulation at, III, 736.
- Carotid sinus, nerve of, anatomy of, III, 2.
- Carotinæmia, in myxœdema, III, 743.
- Carrión's disease, plasma-fatty acids and -cholesterol during, III, 665.
- Carrots, chromatophores of, III, 722.
- crystals and shaped bodies from, III, 863.
- pigment carrier of, III, 655.
- Cartilage, articular, bovine, dehydrogenase activity of, III, 488, 834.
- respiration and glycolysis of, in relation to age, III, 42.
- bovine, cell studies in, III, 84.
- cells, histochemistry of, III, 569.
- composition of, effects of media of different  $p_H$  on, III, 569.
- formation of, microscopy of, in mammals, III, 569.
- of costochondral junction, effect of crystalline oestrin implants on, in rats, III, 525.
- See also Bone and Epiphyses.
- $\beta$ -Carvacryl-ethyl bromide, II, 356.
- $\gamma$ -Carvacryl- $\alpha$ -methyl-n-butyric acid, II, 356.
- Caryophyllene, additive product of maleic anhydride and, II, 370.
- structure of, II, 369.
- Cascade theory, I, 350.
- Casein, coagulation of, I, 365.
- effect of, on nitrogen intake, III, 618.

- Casein**, hydrolysate, metabolism after parenteral administration of, III, 542.  
iodised, spectrum of, ultra-violet absorption, I, 40.  
nutritive value of, effect of hydrolysis on, III, 404.  
sols, coagulation of, in mixed media, I, 398.  
**Caseinogen**, as supplement to maize-protein in pig's diet, III, 759.  
iodinated, thyroidal activity of, effect of iodination on, III, 593.  
*n*- and *iso*-Cassanic acids, and their derivatives, II, 210.  
**Cassava**, sweet. See *Manihot palmata*.  
**Cassia**, hydroxyanthraquinones in, III, 950.  
**Cassia angustifolia**, glucosides, treatment with, of constipation, III, 841.  
leaves, crystalline compound from, II, 123.  
 **$\gamma$ -Cassiopeine**, spectrum of, I, 190, 222, 310.  
**Casts**, rubber, in medicine, III, 426.  
**Castor oil**, dihydroxystearic acid of, II, 277.  
hydrogenated, derivatives from, II, 187.  
tocopherol in, III, 702.  
**Castration**, effect of, on blood in rats, III, 370.  
on lymph nodes, spleen, and thymus in rats, III, 594.  
**Cats**, pellagra in, III, 329.  
**Catalase**, determination of, apparatus for, III, 788.  
in liver of normal and tumour-bearing rats and mice, volumetrically, III, 698.  
effect on, of X-rays, III, 489.  
inhibition of, by hydroxylamine and *p*-hydroxylaminobenzenesulphonamide, and its reversal, III, 935.  
liver-, activity of, in tumours, III, 400, 615.  
magnetic moment of, III, 171.  
preparation of, from beef red blood-corpuscles, III, 716.  
preparation and properties of, III, 640.  
**Catalysis**, by acids, relation of  $pH$  to, I, 176.  
by alloys, I, 403.  
demonstration of, I, 215.  
feed device for, I, 119.  
heterogeneous, I, 270.  
kinetics of, I, 271.  
stages in, I, 270, 272.  
magnetism and, I, 177.  
transition stages in, I, 106.  
**Catalysts**, aluminium-aluminium chloride, in Friedel-Crafts reaction, II, 260.  
aluminium oxide-copper oxide, II, 223.  
copper-chromium oxide, for organic hydrogenation, I, 303.  
copper-nickel, hydrogenation activity of, I, 405.  
copper hydroxide-magnesium hydroxide, inhomogeneity and activity of, I, 107.  
heterogeneous, structure and properties of, I, 272.  
hydrogenation, particle size of, I, 150.  
iron, adsorption of nitrogen on, I, 302.  
nickel formate, improving activity of, I, 272.  
palladium-high polymer, applications of, I, 178.  
palladium- and platinum-high-polymer, preparation of, I, 150.  
platinum, supports for, I, 150.  
surface of, I, 270.  
**Catalytic combustion**. See under Combustion.  
hydrogenation, catalysts for, alkali and alkaline-earth metal, I, 107.  
heat of. See under Heat of hydrogenation.  
of cyclic carbonyl compounds, II, 26.  
of organic compounds, II, 309.  
with copper-chromium oxide catalysts, I, 303.  
with Raney catalysts, II, 213, 245.  
reactions, physico-chemical study of, I, 68.  
study of, with artificially-radioactive indicators, I, 270.  
**Catalepsy**, bulbocephaline. See under Bulbocephaline.  
**Cataract**, electric, pathogenesis of, III, 113.  
formation of, relation of riboflavin to, in rats, III, 518.  
from tryptophan deficiency in rats, III, 742.  
**Cataract**, immature, capsular epithelium alterations in, III, 679.  
senile, aetiology of, III, 590.  
**Catenarin**, synthesis of, II, 24.  
**Catfish**, chromatophore system in, III, 599.  
See also *Ameiurus*.  
**Cathepsin**, action of, effect of various substances on, III, 58.  
**Cathepsins**, classification of, III, 342.  
**Cathodes**, alkaline-earth oxide, crystal structure and emissive properties of, I, 259.  
drop of arcs between, I, 3.  
gallium, electrolytic reduction with, II, 73.  
mercury arc, I, 381.  
dropping, I, 378.  
calibration of, I, 411.  
constant mercury level for, I, 118.  
current-voltage curves of, in acetic acid, I, 300.  
current-voltage curves of mercurous and mercuric salts at, I, 65.  
lead analysis with, III, 428.  
reduction at, I, 303, 399, 400.  
study of polyhydroxy-acids and lactones with, I, 269.  
oxide-coated, sparking of, in mercury vapour, I, 127.  
spectral emissivity of, I, 2.  
photo-. See Photo-cathodes.  
**Catnip oil**, constituents of, II, 124.  
**Cattle**, dairy, physiology of, III, 238.  
See also Cows.  
poisoning of, III, 637.  
range, seasonal calcium and phosphorus requirement of, III, 760.  
reproductive efficiency of, III, 523.  
sterility in, III, 314.  
sulphapyridine in, III, 543.  
**Caulis scabra**, constituents of, II, 338.  
**Caucalol**, diacetate, II, 338.  
**isoCaucalol**, and its diacetate, II, 338.  
**apoCaucalol**, and its diacetate, II, 338.  
**Cauda equina**, vesical dysfunction from lesions of, and its treatment, III, 446.  
**Cauliflower**, calcium of, utilisation of, III, 906.  
**Cedrenedicarboxylic acid**, anhydride, II, 266.  
**Cedrene**, constitution of, and its derivatives, II, 266.  
**Celastrus scandens**, roots, red pigment in, III, 426.  
**Celestite**, in Cis-Indus Salt Range, I, 251.  
**Cell or Cells**, electrochemical, concentration and voltaic, I, 331.  
standard, cadmium, effect of deuterium oxide concentration on potential of, I, 175.  
Weston, production of, I, 186.  
symmetrical, I, 213.  
**Cell or Cells**, photo-electric, I, 74.  
for visible spectral range, I, 74.  
instability of, I, 342.  
selenium barrier-layer, I, 186.  
**Cell or Cells**, physiological, binucleated and multinucleated, in human tissue, III, 83.  
cancerisation of, by Rous sarcoma agent, III, 697.  
cellulose strands in walls of, III, 652.  
contours of, in proximal tubule in cat and dog nephron, III, 365.  
dissociation of, III, 660.  
division of, III, 286.  
and cell metabolism, III, 727.  
effect on, of  $\gamma$ -rays, III, 553.  
of X-rays, III, 364, 487.  
growth of, effect of heterologous tissue extract on, and their use in wound healing, III, 792.  
injury to, in relation to proliferation, III, 149, 433, 849.  
irradiation of, by ultra-violet flashes, III, 416.  
living, glucose utilisation by, effect of vitamin- $E_2$  on, during respiration, III, 620.  
mesoderm, replacing extirpated embryonic limb rudiment, growth and polarisation of, III, 81.  
morphological constituents of, III, 433.  
normal and malignant, radiosensitivity of, III, 535.  
nuclei, action of hydrocarbons and sex hormones on, III, 868.  
**Cell or Cells**, physiological, nuclei, in tissues, structure and growth of, III, 146.  
Purkinje. See under Cerebellum.  
respiration of, III, 623.  
**Cellobiose**, epimerides of, II, 80.  
fermentation of, by bacteria, III, 556.  
**octapropionate**, II, 79.  
synthesis of, II, 351.  
 **$\beta$ -Cellobiose azobenzene-4-carboxylate**, II, 395.  
**Celluloid**, extension and rupture of, I, 364.  
**Cellulose**, acid nature of, I, 59.  
action of light on, I, 118.  
bacteria decomposing, III, 851.  
colloidal, hydrosols of, I, 143.  
deformation and structure of, I, 326.  
derivatives, association and solvation of, in organic liquids, I, 326.  
detection of, reaction for, II, 167.  
determination in, of carboxyl groups, II, 352.  
fibre-, and wood-, carboxyl content of, II, 279.  
fibres, electron microscopy and structure of, I, 391.  
isotropic, preparation and sorption curve of, I, 296.  
stretched, structure of, I, 291.  
films, thin, crystal structure of, and its derivatives, I, 47.  
fractionation of, cupriethylenediamine as solvent in, II, 279.  
grinding of, microscopy of, II, 166.  
high-temperature modification of, II, 191.  
hydrolysis of, in sulphuric acid, I, 370.  
mesylated. See Cellulose methanesulphonate.  
milling of, I, 363.  
native, difference of, from mercerised and reprecipitated cellulose, II, 353.  
formation of, from cellulose hydrate, I, 319.  
oxidation of, by nitrogen peroxide, II, 166.  
particle size degradation of, I, 397.  
particle size distribution in, I, 363.  
regenerated, deformation and fine structure of, I, 291.  
sodium, colloidal properties and rheometry of mixtures of, with sodium glycolate, I, 363.  
xanthated, solution and swelling of, I, 238.  
solutions, action of light on, I, 273.  
structure of, I, 390.  
and its derivatives, I, 167.  
structure and swelling of, I, 324.  
**Cellulose acetate**, acetone-soluble, distribution of acetyl groups in, II, 397.  
dielectric properties of solutions of, I, 144.  
extension and rupture of, I, 364.  
solubility of, I, 364.  
viscosity and concentration of solutions of, I, 144.  
**triacetate**, entropy of mixing and heat of dilution of, in dioxan, I, 100.  
mol. wt. and viscosity of, I, 327.  
acetates, mol. wt. of, I, 327.  
acetonitrile, solubility of, I, 364.  
alkyl ethers, preparation, solubility, and substitution of, II, 167.  
cyanurate, preparation of, II, 191.  
hydrate, conversion of, into cellulose, I, 319.  
electron diffraction in thin films of, I, 166.  
structure of, I, 231.  
methanesulphonate, and its derivatives, II, 83.  
nitrate, fibres, isotropic deformation and orientation of, I, 397.  
solubility of, I, 364.  
nitrates, adsorption by, of acetone, I, 263.  
**Cementite**, crystal structure of, I, 230.  
**Centrifuges**, I, 251.  
laboratory, accessories for, I, 119.  
16-specimen-tube for, I, 188.  
micro-, adapter for, III, 788.  
super-, operation of, I, 378.  
 **$\delta$  Cephei**, radial velocity curve of, I, 310.  
**Ceramics**, metal and oxide, I, 334.  
sintering of, I, 304.  
**Cereals**, auxin formation by, during grain development, III, 359.  
determination in, of riboflavin microbiologically, III, 701.  
enzymes of, III, 265.  
grains, metabolism in, III, 562.  
respiration of, III, 72.

- Cerebellum**, anatomy and evolution of, III, 738.  
 ansoparamedian lobule of, in relation to limb muscle masses, III, 108.  
 anterior, functional localisation within, III, 16.  
 atrophy of, associated with *état marbré* of basal ganglia, III, 587.  
 familial, III, 212.  
 cell structure in, in birds and mammals, III, 214.  
 function of, III, 805.  
 granular layer of, degeneration of, III, 212.  
 Purkinje cells in, in chicks, III, 108.  
 sarcoma of, arachnoidal, III, 675.  
 tumours of, symptomatology with, III, 17.
- Cerebral cortex**, adjacent and sensory, functional organisation of, in monkeys, III, 447.  
 cell-proliferation stimulation in, by growth hormones, III, 805.  
 chimpanzee's, III, 446.  
 cytoarchitecture of, in sheep, III, 739.  
 developmental anomaly of, III, 17.  
 discharge in, induced by metrazol and electrical stimulation, III, 447.  
 electro-encephalography of, III, 674.  
 fetal, cytochrome, cytochrome oxidase activity, histological structure, and oxygen consumption of, in pigs, III, 584.  
 frontal, stimulation of, pupillary and other responses from, III, 742.  
 functions of, in man, III, 739.  
 lesions of, due to insulin, III, 20, 739.  
 lipid pigment distribution in, in man at different ages, III, 674.  
 metabolism of, effect of propazone on, in rats, III, 805.  
 in relation to cerebral disease, III, 214.  
 motor activity of, effect of faradic stimulation of, III, 805.  
 potentials of, effect on, of acetylcholine and prostigmine, III, 739.  
 induced and spontaneous, III, 585.  
 respiration of, effect of inorganic ions on, III, 585.  
 sensory, functional interdependence of, and thalamus, III, 447.  
 stimulation of, implanted electrodes for, III, 674.  
 thalamus in relation to, III, 585.
- Cerebral disease**. See Brain disease.
- Cerebrosides**, II, 297; III, 183.  
 determination of, in nerve tissues, III, 503.  
 from ox spleen, II, 351.  
 lesions produced by, III, 43.
- Cerebrospinal fever**, treatment of, with antiserum, antitoxin, and sulphonamides, III, 545.  
 with sulphapyridine, III, 919.  
 See also Meningitis.
- Cerebrospinal fluid**, Ambrus' colloidal reaction in, III, 21.  
 calcium in, compared with serum-calcium, III, 111.  
 changes in, after lumbar puncture, III, 220.  
 choline-esterase in, in man, III, 741.  
 concentrated, electrophoretic patterns of, III, 587.  
 determination in, of bromine, III, 741.  
 dynamics of, in man, III, 220.  
 electrolyte distribution in, III, 111.  
 human, effect of, on plant growth, III, 586.  
 phosphatide metabolism in, III, 18.  
 pressure of, changes in, in aged, III, 111.  
 effect of anoxæmia on, III, 220.  
 levels of, recording apparatus for, III, 675.  
 proteins, value of, determination of, by tyrosine equivalent method, III, 20.  
 pyruvic acid in, pathological changes in, III, 379.  
 sodium chloride content of, in circulatory failure, III, 303.  
 Takata-Ara reaction in, in internal diseases, III, 111.  
 vitamin-C in, in obstetrics and gynaecology, III, 329.  
 level of, III, 21.  
 seasonal variations in, in infants, III, 702.
- Cerebrum**, activity of, and conscious sensation as physico-chemical process, III, 674.  
 auditory cortex of, in man, III, 214.
- Cerebrum**, concussion of, III, 215.  
 cerebral electrical changes in, III, 301.  
 optokinetic after-nystagmus in, diagnostic significance of, III, 301.  
 dysrhythmia in, in relation to eclampsia, III, 806.  
 effect on, of sulphonamide application, III, 377.  
 frontal lobe lesions in, hyperactivity in monkeys after, III, 517.  
 glioma of, pathology of, III, 699.  
 heat-loss mechanism in, localisation of, in monkeys, III, 517.  
 lesions of right hemisphere of, visual disorientation due to, III, 225, 302.  
 localisation in, of consciousness, III, 517.  
 motor response suppression in, by stimulation, III, 447.  
 tumours of, pore-formation in, III, 218.
- Cerium**, spectrum of, spark, I, 1.  
 Cerium alloys with magnesium and manganese, II, 394.  
 Cerium salts, magnetic rotation of, in aqueous solution, I, 234.  
 Cerium periodate, I, 70.  
 Ceric hydroxide, colloidal, I, 237.  
 sulphate, oxidimetric titration with, I, 27.  
 Cerous salts, diffusibility and hydrolysis of, I, 205.  
 Cerous sulphate, oxidation of, at rotating anodes, I, 178.
- Cerium determination** :-  
 determination of, I, 377.  
 polarographically, I, 410.
- Cerussite**, heat of formation of, I, 367.
- Cervicitis**, classification of, III, 140.
- Cervix**. See under Uterus.
- Cetacea**, larger, lungs of, III, 189.
- N-Cetyl- $\beta$ -naphthylamine**, and its hydrobromide, II, 137.
- 1-Cetylpycolinium halides**, II, 203.
- Cetylpyridinium chloride**, pharmacology and toxicology of, III, 708.
- Cetyltrimethylammonium bromide**, as cleaning agent and disinfectant, III, 922.
- Cevine**, oxidation of, II, 40.
- Chatoxterus**, eggs, effect of hydrostatic pressure on, III, 188.  
 water-permeability of, III, 141.
- Chatoxterus pergamentaceus**, half-eggs of, development of, III, 5.
- Chaksine**, formula for, II, 210.
- Chalkones**, condensation of, with flavanones, II, 327.
- Chalkones**, hydroxy-, formation of, II, 268.
- Chancroid**, treatment of, with sulphanilamide, III, 47.  
 with sulphonamides, III, 707.
- Charcoal**, active, adsorption by, of ampholytes, I, 395.  
 of amylene and ethylene, I, 170.  
 adsorption by, of electrolytes, I, 94.  
 animal, adsorption by, of acids, I, 395.  
 sugar, adsorption by, from solutions of polybasic acids, I, 55.
- Charcot-Marie-Tooth disease**, Friedreich's disease and, syndrome combining, in one family, III, 217.
- Chaulmoogric acid**, ethyl ester, physical constants of, I, 388.  
 homologues of, physical constants of, and of their ethyl esters, I, 388.
- Chaulmoogric acid series**, syntheses in, II, 282.
- N<sup>4</sup>-Chaulmoogroylsulphanilamide**, II, 307.
- Chaulmoogryl chlorothioformate**, II, 391.
- Chaulmoogrylisothiocabamide**, and its hydrobromide, II, 391.
- Chaulmoogryl thiol**, and its cinnamate, II, 390.
- Chaulmoogrylthionrethane**, II, 391.
- Cheillosis**, treatment of, with vitamins, III, 471.
- Cheironomus**, larvæ of, anaërobic excretion of acid by, III, 695.
- Chemical processes**, with solids, I, 152, 160, 304.  
 research, use of neutrons in, I, 286.
- Chemiluminescence** of adsorbed dyes, I, 352.
- Sensitised**, in solutions, I, 6.
- Chemists**, early Irish-American, I, 215.
- Chemistry**, applications of X-ray absorption spectra in, I, 254.  
 colloid. See under Colloids.  
 early, at Le Jardin du Roi, I, 283.  
 general, lecture experiments in, I, 188.  
 lecture demonstrations in, I, 215.  
 medicine and, III, 184.  
 organic. See Organic chemistry.  
 physical methods in, I, 212.  
 structural algebra in, I, 165.
- Chemotaxins**, bacterial, III, 492.
- Chemotaxis**, III, 70, 797.
- Chemotherapeutics**, action of, III, 629.  
 effect of, on enzyme action, III, 935.  
 pyroplasmocidal, II, 307.
- Chemotherapy**, II, 138, 272, 400; III, 629, 768.
- Chenopodium oil**, treatment with, and olive oil, of dermatitis linearis migrans, III, 48.
- Cherry trees**, Montmorency, fruitfulness of, in relation to growth hormone, III, 654.  
 seeds, sterol from, III, 722.
- Chest**, fluorographic examination of, III, 879.  
 radiography of, III, 487.  
 for United States army, III, 879.
- Chickens**, Ancobar, autosexing in, III, 452.  
 comb, growth response of, to androgen, III, 455.  
 egg weight, egg production, and body weight of, effect of restricted diet on, III, 404.  
 glycine requirement of, III, 827.  
 homozygous creeper factor in, III, 791.  
 magnesium requirement of, III, 828.  
 mating behaviour of, after sex hormone injection, III, 455.  
 neural crest of, behaviour of, in grafts to chorio-allantoic membrane, III, 567.  
 prothrombin level in, from vitamin-K injected eggs, III, 9.  
 sex identification of, by down, shank, and beak colour, III, 385.  
 tryptophan requirement of, III, 468.  
 vitamin-A requirement of, fed as carotene, III, 327.  
 See also Cocks, Fowls, *Gallus domesticus*, Hens, and Poultry.
- Chicory**, fructose from, III, 655.
- Childbirth**, shock from pituitary extract in, III, 522.
- Children**, adolescent, growth and development of, III, 3.  
 deaf, speech characteristics in, in relation to training, III, 227.  
 emotional effects on, due to operative procedures, III, 109.  
 health of, effect of war-time rationing on, III, 617.  
 hyperactive, III, 517.  
 hypothyroidism in, III, 116.  
 intelligence tests for, III, 18.  
 nutritional requirement of, III, 617.  
 obese, energy expenditure of, III, 43.  
 obesity in, III, 766.  
 physical characteristics of, in France, in 1941, III, 657.  
 physical fitness of, III, 657.  
 pre-school, magnesium requirement of, III, 153.  
 weight gains in, effect of diet on, III, 826.  
 stature and weight of, in United States, III, 364.
- Chills**, as sulphathiazole toxicity manifestation, III, 48.  
 physiology of, III, 34.  
 produced by amidopyrine, III, 843.
- Chilomonas**, division frequency and fat and starch volume of, III, 569.
- Chiloscyllium griseum**, nidamental gland of, structure and function of, III, 433.
- Chimpanzee**, cerebral cortex of, III, 446.  
 corpus callosum and anterior commissure of, cortical origin and distribution of, III, 517.  
 proprioceptive functions in, effect of medial lemniscus section on, III, 584.
- Chimyl alcohol**, II, 129.
- Chinese**, growth rate of, III, 364.  
 sciatic nerve in relation to piriformis muscle in, III, 361.
- Chiton tuberculatus**, spermatozoa agglutination in, III, 81.

- Chloral**, condensation of, with ethyl acetoacetate, II, 215.  
hydrate, determination of, in blood, III, 632.  
reaction of, with aliphatic ortho-esters, II, 76.  
photochemical oxidation of, I, 179.  
photochemical reaction of, with bromine, I, 273.
- Chloramine**, reaction of, with Grignard reagents and magnesium dialkyls, II, 122.  
**Chloramine-T**, reaction of, with hydrogen sulphide, phosphine, and arsine, I, 181.  
**Chlorates**. See under Chlorine.  
**Chlorazol-black E**, III, 287.  
as vital dye, III, 190.
- Chlorella pyrenoidosa**, chlorophyll in, and photosynthesis, III, 74.  
photosynthesis by, III, 276.  
in relation to light intensity, III, 73.
- Chlorella rubescens**, pyrenoids in chromatophores of, III, 949.
- Chloretone**, anaesthesia with. See under Anaesthesia.
- Chlorex**, toxicology of, III, 169.
- Chlorides**. See under Chlorine.
- Chlorin 4 methyl ester**, meso-unstable, II, 65.  
*n*- and *iso*-Chlorin-*e*, dimethyl esters, and their derivatives, II, 208.
- Chlorin-*e***, dimethyl ester, 6-carboxylethylamide, II, 383.
- Chlorin-*p***, derivatives of, II, 181.  
dimethyl ester, derivatives of, II, 383.
- Chlorins**, chlorination and nitration of, II, 152.  
derivatives of, II, 181.
- isoChlorins**, II, 383.
- Chlorin-aldehydes**, reactions of, II, 207.
- Chlorin-*e*-rhodin-*g***, accumulation and elimination of, in visceral organs, III, 479.  
effect of, on tuberculosis, III, 479.
- Chlorination**, effect of organic peroxides in, II, 69.
- Chlorine**, action of, on iron and chromium hydroxides in presence of iodine, I, 181.  
with sulphur dioxide on aliphatic hydrocarbons, I, 296.  
adsorption of, van der Waals, by silica gel, I, 170.  
atomic weight of, I, 255.  
isotopes, radioactive, effect of, on mice, III, 158.  
preparation and properties of, I, 128.  
spectrum of, I, 381.
- Chlorine fluoride**, spectrum of, absorption, I, 257.  
*monoxide*, solubility of, I, 19, 323.  
*dioxide*, reaction of, I, 406.  
*oxyfluoride*, I, 406.
- Hydrochloric acid**, absorption of, by water, demonstration of, I, 215.  
adsorption of, by silica gel, I, 171.  
breakdown potentials in, I, 8.  
constant-boiling, production of, I, 181.  
electrical conductance of, I, 64.  
partial pressure of, in aprotic solvents, I, 63.  
in  $\beta\beta$ -dichloroethyl ether and anisole solutions, I, 299.  
polarisability and internuclear distance in, I, 351.  
reaction of, with hydrogen, I, 208.  
self-diffusion of, I, 168.  
solubility in, of chlorides, I, 324.  
solubility of, in carbon tetrachloride and chloroform, I, 54.  
triple-point pressure of, I, 139.
- Chlorides**, accumulation of, in plant cells, III, 499.  
determination of, in biological fluids, III, 183, 428.  
diffusion of, in tissues, III, 575.  
excretion of, after bromine injection, III, 54.  
after mercurial diuretic dosage in dogs, III, 771.  
intestinal absorption of, fluid-circuit theory applied to, III, 529.  
solubility of, in hydrochloric acid, II, 323, 359.  
withdrawal of, from blood by gastric glands, III, 456.
- Chlorine** :—  
**Chloride ions**, entropy of, I, 331.  
**Chlorates**, determination of, in presence of cupric salts, I, 339.  
poisoning by. See under Poisoning.
- Chlorites**, I, 336.  
reactions of, with carbohydrates, II, 47.
- Hypochlorous acid**, dissociation constant of, I, 367.
- Hypochlorous ions**, velocity of decomposition of, I, 369.
- Chlorine determination** :—  
determination of, by Volhard's method, in presence of nitric and nitrous acids, I, 338.  
in organic compounds, II, 211, 243.  
microchemically, I, 276.  
volumetrically, with zinc amalgam, I, 276.
- Chlorites**. See under Chlorine.
- Chloritoid**, crystal structure of, I, 283.
- Chlorknallgas**, I, 208.
- Chloroamine**. See Chloramine.
- Chloroamines**, addition of, to ketens, II, 349.  
spectra of, absorption, and their aliphatic derivatives, I, 164.  
 $\beta$ -Chloroethylation, II, 294.
- Chloroform**, action of oleum and sulphur trioxide on, I, 406.  
chlorination of, in presence of ferric chloride, I, 177.  
determination of, in blood, III, 632.  
equilibrium of, with acetone and water, I, 240.  
liberation of pharmacologically active substances in tissues by, III, 166.  
poisoning by. See under Poisoning.  
spectrum of, infra-red, I, 44.
- Chlorofucine**, III, 950.
- Chlorogenin**, structure of, II, 232, 265.  
*epi*Chlorogenin, II, 232.  
 $\psi$ - $\beta$ -Chlorogenin, II, 265.
- $\alpha$ -Chloroketones**, reaction of, with potassium cyanide, II, 326.
- Chloroleukemia**, III, 797.
- Chloro-paraffins**, maximum boiling mixtures of, with donor liquids, I, 15.
- Chlorophyceae**, carotiniferous, cytology of, III, 949.
- Chlorophyll**, II, 33, 34, 65, 152, 181, 207, 274, 382, 383.  
derivatives, constitution and spectra of, I, 352.  
racemisation of, II, 382.  
spectra of, absorption, I, 82, 314.  
fluorescence of, and photosynthesis, I, 69.  
interconversion of, in photosynthesis, III, 861.  
photosynthesis of brown cells in reaction of, with carotenoids, I, 25.  
protein complexes of, III, 722.  
electrophoresis of, III, 554.  
reversible bleaching of, I, 69.  
solvents for, organic, III, 76.
- Chlorophyll *a***, formation of, from dehydrobacteriophosphoride-*a*, II, 33.
- Chlorophyll *y***. See Chlorofucine.
- Chlorophyllporphyrins**, chloro-derivatives of, 181.
- Chloropierin**, spectrum of, Raman, I, 315.
- Chloroprene**, polymerisation of, action of tetralin hydroperoxide and nitro-compounds on, I, 106.
- Chlororaphin**, antibacterial action of, III, 344.
- Chlorosulphonic acid**, as reagent for alkylbenzenes, II, 136.  
purification of, I, 282.  
vapour pressure of, mixed with sulphur trioxide, I, 358.
- $\Delta^{1,2}$ -Choladienic acid**, II, 103.
- Cholangiography**, III, 319.
- Cholanic acid**, 3( $\alpha$ )-12( $\alpha$ )-*di*hydroxy-, and its derivatives, II, 412.  
11:12-*di*hydroxy-, and its derivatives, II, 411.  
3( $\alpha$ )-11:12-*tri*hydroxy-, II, 286.
- 3-*allo*Cholanic acid**, 3- $\beta$ -hydroxy-, formation of, from scillaren-*A*, II, 81.
- Cholanthrene**, derivatives of, carcinogenicity of, III, 396.
- Cholecystitis**, pathogenesis of, III, 755.
- Cholecystography**, shadow density in, in relation to iodine content, III, 459.
- Cholelithiasis**. See Gall-stones.
- Cholenic acid**, hydroxy-, II, 323.
- $\Delta^5$ -Cholenic acid**, 3-hydroxy-, esters and ethers of, II, 103.
- $\Delta^{11}$ -Cholenic acid**, and its derivatives, II, 411.
- $\Delta^{11}$ -Cholenic acid**, 3( $\alpha$ )- and 3( $\beta$ )-hydroxy-, and their derivatives, II, 411.
- Cholera**, III, 532.  
*Bacillus coli* in cases of, III, 718.  
fowl, treatment of, with sulphapyridine, III, 627.  
hog. See Swine fever.  
infection with, in mucin suspension, III, 783.  
kidney histopathology in, III, 145.  
vibrios of, dried, recovery of, III, 496.
- Cholestadienes**, preparation of, II, 167.
- $\Delta^{3,5}$ -Cholestadiene**, II, 25.
- Cholestane-3:5:6-triol-*I***, preparation of, II, 230.
- epi*Cholesterol  $\beta$ -glucoside tetraacetate**, II, 352.
- t*-Cholesterol  $\beta$ -glucoside tetraacetate**, II, 352.
- Cholestenes**, preparation of, II, 137.
- $\Delta^2$ -Cholestene**, II, 102.
- $\Delta^4$ -Cholestene-3:6-diol**, II, 321.
- $\Delta^8$ -Cholestene-3:5-diol**, and its derivatives, II, 102.
- $\Delta^8$ -Cholestene-3( $\beta$ )-5-diol**, II, 230.
- $\Delta^8$ -Cholesten-7-ol**, II, 167.
- Cholestenone**, oxidation of, by persulphuric acid, II, 366.
- $\Delta^8$ -Cholesten-7-one**, II, 137.
- Cholesterinase**, serum-. See under Blood-serum.
- Cholesterol**, antihæmolytic properties of, III, 870.  
autoxidation of, II, 102.  
biological formation of, from acetic acid, III, 623.  
constitution of, II, 366.  
determination of, in plasma and serum, III, 876.  
in urine, III, 756.  
effect of, in rabbits, III, 703.  
free and combined, determination and separation of, in serum, III, 799.  
in animal organism, III, 34.  
in bone marrow, III, 85.  
in enlarged and normal prostates, III, 903.  
metabolism of. See under Metabolism.  
methylcholanthrene-containing pellets of, tumour production from, in mice, III, 613.  
photo-oxidation of, II, 321.  
serum-. See under Blood-serum.  
spectrum of, Raman, I, 289.
- Cholesterol**, hydroxy-, dibenzoate, and bisdinitrobenzoate, II, 321.
- 7( $\alpha$ )-hydroxy-, benzoyl derivative**, and its derivatives, II, 286.
- Cholesterols**, 7-hydroxy-, III, 624.
- allo*Cholesterol**, molecular compound of, with *epiallo*cholesterol, II, 25.
- Cholesterolemia**, in rats, III, 876.
- Cholesteryl calcium sulphate**, thermal decomposition of, II, 229.  
sulphates, antirachitic product from, formation of, III, 473.
- Cholic acid**, action on, of *Alcaligenes faecalis*, III, 940.  
derivatives of, II, 146.  
fate of, in guinea-pig, III, 755.
- Choline**, deficiency of, in rats, III, 331, 760, 906.  
vitamin-*A* distribution in, III, 619.  
determination of, II, 160; III, 952.  
in biological fluids, III, 427.  
effect of, on liver-lipins in rats, III, 755.  
esters of, II, 300.  
in synthetic diet for dogs, III, 38.  
in tumour-bearing animals, III, 757.  
metabolism of. See under Metabolism.  
nutritional importance of, III, 827.  
prevention by, of hæmorrhagic kidneys in rats, III, 906.  
of hepatic hæmorrhage and necrosis, in rats, III, 897.  
of liver cirrhosis in rats, III, 318.  
replacement of, by arsenocholine in lecithin synthesis, III, 915.  
structural specificity of, in *trans*-methylation, III, 619.  
synthesis of, by rats on diets with and without lipotropic methyl, III, 474.



- Choline-esterase**, III, 641.  
 activity of, effect of vitamin-E lack on, III, 914.  
 blood-serum. See under Blood-serum.  
 effect of potassium and sodium salts on, III, 341.  
 in central nervous system in man, III, 518.  
 in cerebrospinal fluid in man, III, 741.  
 in human secretory organs, III, 641.  
 in insect nervous system, III, 584.  
 in nerve fibres, localisation of, III, 209.  
 in relation to sex, III, 341.  
 inhibition of, by diamines and sulphanilamide, III, 641.  
 serum-. See under Blood-serum.
- $\alpha$ -Cholyl- $\beta$ -*p*-aminobenzenesulphonylhydrazine**, II, 146.
- Chondroitin**, treatment with, of idiopathic headache, III, 110.
- Chondro-osteo-dystrophy**, with hereditary short digits, III, 568.
- Chorda tympani**, section of, submaxillary gland sensitisation to acetylcholine by, III, 676.
- Chorio-allantoic membranes**. See under Membranes.
- Choriomeningitis**, III, 944.
- Choriopithelioma**, III, 133, 238.  
 diagnosis of, from urinary hormone excretion, III, 133.  
 ectopic, and hydatiform mole in cardinal ligament, III, 536.
- Chorioretinitis juxta-papillaris**, III, 590.
- Choroid plexus**, and brain development, III, 506.  
 choline-esterase of, III, 680.  
 endoscopic cauterisation of, treatment with, of hydrocephalus, III, 675.  
 enzyme distribution in, III, 680.
- Choroideræmia**, so-called. See Retinitis pigmentosa with gliosis.
- Chromans**, with tocopherol-like structure, II, 268.
- Chromatin**, integrations of, unusual in Acridid genera, III, 791.
- Chromatograms**, with two liquid phases, I, 160.
- Chromatography**, in inorganic chemistry, I, 334.  
 theory of, I, 160.
- Chromatophores**, III, 655, 722, 863.
- Chromic acid**. See under Chromium.
- Chromite**, Californian, I, 348.
- Chromium**, co-precipitation of, with barium sulphate, I, 154.  
 electrodeposition potential of, I, 268.  
 films, on glass, I, 230.  
 thin, optical properties of, I, 196.
- Chromium alloys**, with aluminium, I, 394.  
 with iron and nickel, phases of, I, 93.  
 with nickel, transformations and mass effect in, I, 93.
- Chromium amide**, and its compounds with ammonia, I, 336.  
 trichloride, heat of formation of, I, 330.  
 fluorides, heats of formation of, I, 330.  
 hydroxide, action of chlorine on, in presence of iodine, I, 181.  
 sols, I, 237.  
 selenates, complex, I, 70.
- Chromic bromide**, reaction of, with ether, I, 247.  
 oxide, hydrates, I, 230.  
 reaction of, with zinc oxide, I, 274.
- Chromous salts**, electrometric titration with, I, 376.
- Chromic acid**,  $p_H$  of solutions of, measured with glass electrodes, I, 239.
- Chromates**, conversion of, into dichromates, determination of, conductometrically, I, 340.  
 reactions of, at high temperatures, I, 152.  
 Chromate ions, diffusion coefficients of, I, 322.
- Dichromates**, reaction of, with hydriodic acid, catalysed by oxalates, I, 402.
- Chromiselenates**, complex, formation of, I, 111.
- Chromiselenic alums**, dehydration of, I, 111.
- Chromosilicic acid**, I, 70.
- Chromium organic compounds**:-  
 Chromium trisdiguanide, compounds of, II, 78.  
 Chromic ethanolaniline complexes, I, 337.
- Chromobacterium iodinum**, pigment from, antibacterial action of, III, 344.
- Chromoblastomycosis** in Cuba, III, 491.
- Chromones**, of naphthalene series, II, 236.  
 substituted, benzopyrylium salts from, II, 109.
- Chromosomes**, chemistry of, III, 432.  
 differential, in Orthoptera, III, 791.  
 effect on, of neutrons and X-rays, III, 568.  
 homologous pairing of, III, 364.  
 lamp-brush, study of, with electron microscope, III, 654.  
 phosphatase in, cytology of, in mouse testes, III, 793.  
 polytene, development of, III, 867.  
 rupture of, III, 791.  
 sex, in human intersex, III, 431.  
 staining of, with acetic-orcein, III, 7.  
 tetrad, analysis of, linkage values from, III, 364.
- Chroococcus**, photosynthesis by, phycocyanin in, III, 500.
- Chrysene**, carcinogenic effect of, and its derivatives, III, 397.
- Chrysiasis**, III, 337.
- Chrysin 7-acetate**, II, 149.
- $\Delta^{8(14)}\text{-}9$ -Chrysitadiene-*cis*-6:7-*cis*-11:12-tetracarboxylic acid**, and its tetramethyl ester, I, 313.
- $\Delta^{8(14)}\text{-}9$ -Chrysitadiene-*trans*-6:7-*trans*-11:12-tetracarboxylic acid**, tetraethyl and tetramethyl esters, II, 313.
- $\Delta^8$ -Chrysitene-*cis*-6:7-*cis*-11:12-tetracarboxylic acid**, tetramethyl ester, II, 313.
- Chymotrypsin**, formation of, from chymotrypsinogen, III, 342.
- Chymotrypsinogen**, mol. wt. of, and its amino-acid content, II, 68.
- Ciba**, effect of, on nasal mucous membrane congestion, III, 481.
- Cibazol**. See Sulphathiazole.
- Cicutula maculata**, cicutin from, II, 431.
- Cicutin**, and its methyl derivative, II, 431.
- Cigarette smoke**. See under Tobacco smoke.
- Ciliary processes**, choline-esterase of, III, 680.
- Cinemicrography**. See Kinemicrography.
- Cinchona alkaloids**, detection of, as iodosulphates, II, 184.  
 optical activity of, and of their salts in alcohol-water mixtures, II, 385.  
 treatment with, of pneumonia, II, 336.  
 vinyl-free, synthesis of, and their antimalarial activity, II, 38.
- Cinchonic acid**. See Cinchoninic acid.
- Cinchoninanilide**, and 6-chloro-, II, 288.
- Cinchoninic acid**, keto- and thiol-derivatives of, from rhodanine-oxindoles, II, 423.
- Cinchoninic acid**, 6-chloro-, and its derivatives, II, 288.
- Cinchoninodiethylamide**, and its picrate, II, 288.
- Cinchoninomethylamide**, II, 488.
- Cinchophen**, III, 484.  
 effect of, on liver, III, 31.  
 hepatitis due to, III, 484.
- Cinder cones**, N. Arizona, volcanic bombs from, I, 347.
- Cinnabar**, genetic correlation of gold-silver deposits and, I, 283.  
 spectrography of, I, 380.
- Cinnamamidomethylisothiocarbamide**, *o*-chloro-, hydrochloride, II, 194.
- Cinnamhydroxymethylamide**, *o*-chloro-, II, 194.
- Cinnamic acid**, *p*-bromo-, reactions of, II, 13.  
*di*- and *tri*-bromo-derivatives, and their derivatives, II, 13.  
*p*-nitro-, aryl esters, II, 311.
- Cinnamic acids**,  $\beta$ -substituted, synthesis of, II, 282.
- Cinnamoyl chloride**, *p*-nitro-, II, 311.
- 5-Cinnamoyl-1-benzyl-4-styrylpiperidine**, 4-hydroxy-, II, 270.
- 2-Cinnamoyl-1:1-diethoxy-3-phenylcyclobutane**, II, 227.
- 2-Cinnamoyloxy-1-acetonaphthone**, II, 236.
- Cinnamyl chaulmoogryl ether**, II, 390.
- chaulmoogryl sulphide**, II, 390.
- hydrocarpyl sulphide**, II, 390.
- oleyl ether**, II, 390.
- 5-Cinnamyl-5-ethylbarbituric acid**, II, 151.
- Cinnamylidenemalononitrile**, *p*-nitro-, I, 226.
- Cinnamyl-N-oleylxanthamide**, II, 391.
- Cinnamyl thiol**, II, 390.
- Cinnoline**, 6-nitro-4-hydroxy-, II, 16.
- Cinnolines**, II, 273.
- Ciona intestinalis***, eggs of, centrifuged, III, 567.
- Cirrrosis**, liver. See under Liver diseases.  
 portal, and effect of dietary and vitamin deficiencies, III, 458.
- Citellus mongolicus***, diencephalic nuclei and fibre paths in, III, 108.
- Citral**, determination of, with photo-electric colorimeter, II, 68.
- Citric acid**, aluminium salt, solutions, as substitute for aluminium acetate N.F., III, 711.  
 content of, in animal tissues, III, 34.  
 determination of, II, 160, 360.  
 effect of, on blood-pyruvic acid, III, 158.  
 electrolytic dissociation of, in sodium chloride solutions, I, 23.  
 lead complex ion, and its rôle in lead poisoning physiology and therapy, III, 412.  
 preparation of, from citrus fruits, III, 181.  
 sodium salt, effect of, on cell regeneration and repair in kidneys injured by uranium nitrate, III, 771.
- Citrinin**, bactericidal properties of, III, 174, 267.  
 determination of, polarographically, II, 387.
- Citrobacter***, glycerol dissimilation by, III, 646.
- Citronellylideneaniline**, II, 399.
- Citronellylidene- $\beta$ -hydroxyethylamine**, II, 399.
- Citronellylidene- $\beta$ -hydroxyethylamine**, II, 399.
- Citrulline**, conversion of, into arginine in kidney, III, 331.
- Citrus aurantifolia***, oil from. See Lime oil.
- Citrus decumana***, bitter principles of, II, 42.
- Citrus fruit**, citric acid from, III, 181.  
 constituents of, II, 431.  
 effect of aluminium on copper toxicity to, III, 860.
- Givetone**, cryoscopic constant of, II, 178.  
 dicarboxylic acids from, I, 298.  
 synthesis of, dicarboxylic acids in, II, 393.
- Claudication**, intermittent, diagnosis of, III, 97.
- Claviformin**, III, 937.
- Clay** or Clays, adsorbent, in rhyolitic cinerites of Puy-de-Dome, I, 284.  
 anauxite, Californian, I, 348.  
 colloidal, ammonium-ion activities in, I, 204.  
 potassium-ion activities in, I, 172.  
 feldspathic, Kaka, Nelson, I, 348.  
 London, I, 124.  
 mineral, study of, with electron microscope, I, 284.  
 particles, electric charge of, I, 57.  
 sedimentation of, I, 57.  
 siderolithic, of Dordogne, I, 284.  
 swelling of, I, 20.
- Cleaning agents**, cetyltrimethylammonium bromide, III, 922.
- Cleidocranial dysostosis**, III, 2.
- Clibanarius olivaceus***, spermatogenesis of, III, 391.
- Climacteric**, anogenital pruritus in, treatment of, with testosterone propionate, III, 690.  
 treatment of, with follicular hormone, III, 388.  
 urinary excretion of 17-ketosteroids in, III, 603.
- Climate**, tropical, man's reaction to, III, 262.
- Clionastene-3:5:8-triol**, II, 230.  
 derivatives of, II, 411.
- $\Delta^4$ -Clionastene-5:5-diol**, and its dibenzoate, II, 411.
- Clionastene-5-ol-3:6-dione**, II, 411.
- $\Delta^4$ -Clionastene**, and its 3:5-dinitrophenylhydrazone, II, 229.  
 2:4-dinitrophenylhydrazone, II, 411.
- Clionasterol**, II, 411.  
 structure of, II, 229.
- $\Delta^4$ -Clionastene-3:6-diol**, II, 230.
- Clorarsen**, treatment with, of syphilis, III, 483.
- Clostridium***, motile daughter colonies in, III, 64.
- Clostridium acetobutylicum***, acetone-butyl alcohol fermentation by, III, 345.  
 bacteriology, fermentation reactions, and growth-factor requirements of, III, 62.  
 fermentation by, III, 852.
- Clostridium acidivorici***, purine decomposition by, III, 64.

- Clostridium botulinum*, amino-acid and glucose utilisation by, III, 422.
- Clostridium cylindrosporum*, purine decomposition by, III, 64.
- Clostridium oedematiens*, detection of, in benzidine media, III, 852.
- Clostridium septique*, toxin, circulatory effect of, III, 557.
- Clostridium tetani*, growth of, folic acid for, III, 648.
- Clostridium welchii*, amino-acid metabolism by, III, 780.
- cultures, effect on, of oxygen under pressure, III, 940.
- formation of hyaluronidase and toxins by, III, 852.
- infection by, after abortion, diagnosis of, III, 557.
- treatment of, with X-rays, in dogs, III, 338.
- toxins, III, 270.
- activity of, III, 346.
- formation of, in peptone-free medium, III, 64.
- reaction of, with human sera, III, 557.
- Clothing, in relation to air conditioning, III, 713.
- new, unlaundered, dermatitis from, III, 552.
- Cloud-chambers, optimum liquids for, I, 158.
- photographs of, at high altitudes, I, 312.
- portable, I, 342.
- Wilson, operation of, I, 308.
- Clover, inoculation of, III, 277.
- red, nitrogen fixation by, carbon monoxide as inhibitor for, III, 421.
- See also *Trifolium pratense*.
- sweet, coumarin in, III, 75.
- poisoning by. See under Poisoning.
- white. See *Trifolium repens*.
- Clupea pallasii*, vertebral centra in, variation of, III, 505.
- Clupein*, cleavage products of, chromatographic separation of, II, 386.
- Clymenella*, buds, induced, III, 867.
- Clymenella torquata*, nerve cord implants in, buds induced from, III, 5, 363.
- Cnemidophorus sexlineatus*, activity of, III, 899.
- Coagulants, chemical, for burns, III, 840.
- Coagulase test, dried plasma for, III, 782.
- Coagulates, structural properties of, I, 21.
- Coal, British Malaya, veins of, I, 348.
- brown, of Wackersdorf, Germany, pollen analysis of, I, 124.
- constituents of, vegetable, I, 348.
- Fife, microspores in, I, 124.
- Nürschan, Pilsen, I, 252.
- palaeobotany of, I, 220.
- petrified, I, 252.
- Ruhr district, dolomitic sphaerolite-wood in, I, 252.
- seams, sulphides and carbonates in, I, 76.
- Cobalt, crystal structure of, I, 389.
- $\Delta E$  effect of, I, 88.
- ions, complex, vibrational structure of, I, 225.
- isotopes, I, 255.
- radioactive, I, 129.
- entrainment of, by stannic sulphide, I, 94.
- rays from, I, 34.
- rays from, I, 383.
- spectrum of, I, 285.
- Cobalt alloys, with aluminium, I, 395.
- with aluminium and iron, I, 18.
- with aluminium and nickel, I, 395.
- with antimony, superstructure of, I, 390.
- with antimony, arsenic, bismuth, and magnesium, ternary, I, 394.
- with antimony and magnesium, I, 394.
- with iron, I, 169.
- with nickel, magneto-resistance effect in, I, 92.
- with niobium, tantalum, and zirconium, structure of, X-ray, I, 354.
- with platinum, crystal structure of, I, 141.
- with zinc, I, 394.
- Cobalt bases:—
- Cobalt chloro- and aquo-pentamines, reversible transformation of, in dilute hydrochloric acid, I, 269.
- hexamine halides, heat capacities of, I, 49.
- Cobalt compounds, effect of, on pine disease in sheep, III, 327.
- magnetic behaviour of, I, 261.
- Cobalt salts, complex, spectra of, absorption, I, 225.
- Cobalt amide, and its compounds with ammonia, I, 336.
- ferrite, formation of, I, 276.
- oxides, magnetic susceptibilities of, I, 231.
- sulphide, equilibrium of, with antimony and with bismuth sulphides, I, 329.
- thiosulphate, light absorption of solutions of, I, 194.
- Cobaltous chloride, deposition potential of cobalt from benzene-methyl alcohol and methyl alcohol solutions of, I, 399.
- spectra of, absorption, in non-aqueous solution, I, 288.
- sulphate, use of, in organic analysis, II, 243.
- Cobalt organic compounds:—
- Cobalt carbonyl, and its hydride, I, 337.
- carbonyl hydride, metallic derivatives of, I, 337.
- Cobaltic diguanide silver hydroxide, II, 78.
- trisdiguanidium salts, II, 78.
- Cobaltous ethanolamine complexes, I, 337.
- Cobalt detection and determination:—
- detection of, with oxanilic acid thioamide, I, 184.
- determination of, colorimetrically, I, 340.
- in animal tissues, III, 428.
- Coca. See *Erythroxylon*.
- Cocaine, effect of, on humoral transmission of sympathetic nerve actions, III, 922.
- isolation and spectrographic measurement of, from brain tissue, III, 483.
- Coccarboxylase, action of, on frog ventricle, III, 665.
- alimentary interconversion of, and thiamin, III, 830.
- Coccids, ammonia fumigation for, III, 414.
- Coccidioidomycosis, relation of, to calcified pulmonary nodules, III, 850.
- Coccidiosis, caecal, prevention of, organic sulphur compounds in, III, 631.
- Cocks, Leghorn, female feathering in, III, 118.
- See also Chickens, Fowls, *Gallus domesticus*, Hens, and Poultry.
- Cockroach, American, arsenic distribution in, III, 901.
- Cod, eggs of. See under Eggs.
- melanosis in, III, 569.
- Cod-liver oil, action of, in tuberculosis, III, 42.
- concentrate of, carcinogenicity of, III, 757.
- dermatitis due to, III, 784.
- in experimental wound treatment, III, 708.
- Codeine, and its derivatives, III, 842.
- dermatitis due to, III, 843.
- Coelom, organs originating from wall of, III, 567.
- Co-enzymes, content of, in animal tissues, III, 40.
- in tissues of normal and blacktongue dogs, III, 831.
- Colchicine, effect of, on genital tissue of female mice, III, 238.
- on methylcholanthrene epidermal carcinogenesis in mice, III, 613.
- on mitotic activity of epithelioma, III, 534.
- polyploidy induced by, III, 74.
- Colds, prevalence of, in relation to atmospheric streptococci, III, 719.
- "Cold pressor effect," pain due to, III, 106.
- Colemanite, structure of, X-ray, I, 355.
- Coleoptiles, auxins in, III, 277.
- Colitis, ulcerative, chronic, intravenous therapy in, III, 818.
- familial, III, 754.
- due to food allergy, III, 608.
- idiopathic, functional disturbance of small intestine in, III, 608.
- treatment of, with *B. coli* serum, III, 818.
- with salazopyrin, III, 920.
- with sulphaguanidine, III, 480, 920.
- with vaccines, III, 243.
- Collagen, effect on, of ascorbic acid and hydrogen peroxide, III, 833.
- electron-microscopic study of, I, 297.
- implanted, inflammation due to, III, 946.
- X-ray structure of, I, 231.
- Collagenic thread, for wounds. See under Threads.
- Collembola. See *Onychiurus armatus*.
- Colletotrichum*, III, 343.
- Colletotrichum falcatum*, growth of, III, 343.
- Colliculus, superior, potentials from, III, 805.
- Colloidon, base-exchange properties of, I, 171.
- membranes. See under Membranes.
- Colloids, activity and conductivity coefficients of, I, 172.
- cataphoretic speed of, determination of, I, 173.
- chemistry of, I, 172.
- dialysis of, I, 237.
- effect on, of light, III, 58.
- of X-rays, III, 58.
- electrokinetic potential and sign of charge of, I, 61.
- electro-optics of, I, 361.
- flocculation and precipitation of, I, 238.
- heteropolar molecular, I, 363.
- highly purified, I, 265.
- hydrophilic. See Colloids, lyophilic.
- lyophilic, dielectric constant of, I, 58.
- gelation of, I, 21, 59.
- sensitisation and surface charge of, I, 365.
- structure and viscosity of, I, 296, 326.
- migration of, through interface between immiscible liquids, I, 266.
- osmotic pressure of, III, 437.
- protective, ammonium alginate as, I, 21.
- stabilisation by, of suspensions, I, 361.
- proteolytic enzyme activity of, from thyroid follicle, III, 26.
- sol-gel transformation of, I, 238.
- thixotropic, sol-gel transformation of, effect of shaking on, I, 238.
- ultra-, formation of, I, 266.
- volumes of, in solution, I, 59.
- Colloidal dispersions, production of, by super-sonic waves, I, 56.
- electrolytes. See under Electrolytes.
- gels, elastic properties and moisture hysteresis in, I, 144, 173.
- electrokinetic equations for, I, 365.
- of three-dimensional polymerides, I, 173.
- silica-sesquioxide, adsorption of silver salts by, I, 94.
- structure and swelling of, I, 296.
- hydrosols, production of, by freezing, I, 20.
- materials, aggregation and diffusion in, I, 265.
- particles, aggregation of, reversible, I, 57, 365.
- stable, formation of, by solubilisation, I, 172.
- sols. See Colloidal solutions.
- solutions, lyophilic, coagulation of, I, 365.
- lyophobic, coagulation of, by electrolyte mixtures, I, 98.
- stability of, I, 203.
- of higher polymerides, I, 20.
- osmotic pressure of, I, 118.
- protective properties of fruit tree gums for, I, 61.
- shear-elasticity in surface of, I, 96.
- stability of, I, 327.
- ultrafiltrates from, I, 142.
- viscosity of, I, 326.
- weakly solvated, coagulation of, I, 98.
- suspensions, crystalline, depolarisation of light in, I, 296.
- sediment volumes and specific viscosity of, in mixed liquids, I, 296.
- shear-elasticity in surface of, I, 96.
- stabilisation of, I, 361.
- viscosity of, I, 16, 168.
- systems, fractionation of, with supercentrifuge, I, 378.
- stability of, represented in isochrones, I, 296.
- stoichiological quantities in, determination of, I, 361.
- viscosity of, I, 266.
- thermoscope, I, 296.
- Colon. See Intestines, large.
- Colorimeters, photo-electric, I, 74, 342; III, 655, 951.
- for rapid reactions, I, 250.
- Colorimetry. See Analysis, colorimetric.
- Colostrum, carotene content of, III, 829.
- Colour, animal, changes in, hormonal and nervous regulation of, III, 592.
- constitution and, II, 153, 238.
- measurement of, I, 185; III, 225.

- Colour, of opaque objects, recording of, I, 185.  
 preservation of, in specimens, III, 360.  
 stereoscopic phenomenon of, III, 25, 225.  
 white, I, 185.
- Colour-blindness, relation of, to industry, III, 681.  
 treatment of, with vitamin-A, III, 743.
- Colour vision. See under Vision.
- Colouring matters, cyclic pyrrole, spectra of, absorption, I, 352.  
 plant. See Plants, pigments of.  
 See also Dyes, Pigments, etc.
- Colpidium campyllum*, oxygen consumption of, III, 175.
- Colpoda duodenaria*, excystment of, blocking of, by oxygen absence, III, 102.  
 in ultra-violet light, III, 263.  
 growth factor for, III, 491.
- Columbomicrolite, from Eshowe, Natal, I, 219.
- Coma, after tetrachloroethylene dosage, III, 260.  
 hypoglycemic, temperature studies in, after schizophrenia, III, 217.  
 post-anæsthetic, treatment of, with aminophyllin, III, 924.
- Combustion, catalytic, on surfaces, I, 270.  
 spectroscopy in, I, 192.
- Comets, spectra of, I, 193, 313.
- Complanatine, and its perchlorate, II, 291.
- Complement, chemistry of, III, 572.  
 fixation of, III, 651.  
 by antigens, III, 946.  
 effect of physiological salines in, III, 91.  
 serum, activity of, effect of sodium hexameta-phosphate on, III, 11.  
 liquid, preservation of, III, 369.  
 serum-protein components of, preparation and physicochemistry of, III, 572.
- Compounds, association of, I, 62.  
 carcinogenic. See Carcinogenics.  
 complex, disorder in formation of, I, 174.  
 co-ordination, magnetic studies of, II, 67.  
 with furfuraldoxime as chelate group, II, 28.  
 inorganic. See Inorganic compounds.  
 ionic and mol. weights of, in solution, I, 294.  
 long-chain, kinetics of degradation of, I, 301.  
 properties of solutions of, I, 174.  
 macromolecular, I, 242, 327, 363, 397; II, 293, 352, 353.  
 filamentous, molecular orientation of, I, 143.  
 molecular orientation and associated properties in, I, 296.  
 mol. wts. of, I, 231, 364.  
 mol. wt. and viscosity of, I, 237.  
 solubility of, I, 97.  
 organic. See Organic compounds.  
 reactivity of, effect of negative groups on, I, 24.
- Compressibility, electron volume and, I, 256.  
 of gas mixtures, I, 90.
- Compression chamber, animal, III, 207.
- Concentration, effect of, on reaction rate and equilibrium, I, 207.
- Concussion, cerebral. See under Cerebrum.
- Condensations, II, 130, 133.  
 blocking effect in, II, 89.
- Condensers, laboratory, I, 28.  
 reflux, support for, I, 282.
- Congo-red, effect of, on plasma-prothrombin, III, 437.
- Congo-rubin, solutions of, I, 97.
- Conicine hydrochloride, crystals, optical properties of, I, 231.
- Conifers, propagation of, vegetative, III, 562.
- Conjunctivitis, gonococcal, treatment of, with sulphonamides, III, 259.
- Consciousness, cerebral localisation of, III, 517.
- Constants, dimensional, in relation to electric and magnetic constants, I, 88.  
 physical, I, 189.
- Constipation, treatment of, with senna glucosides, III, 841.
- Constitution, biological, neurological analysis of, III, 16.  
 scleroma and, III, 395.  
 chemical, absorption spectra and, II, 161, 164.  
 antiplasmodial action and, II, 288.  
 antiseptic activity and, III, 718.  
 colour and, I, 152, 238.
- Constitution, chemical, investigations of, II, 274:  
 æstrogenic activity and, II, 223.  
 optical rotation and, II, 325, 417.  
 osmotic coefficients and, I, 174.  
 Raman spectra and, I, 387.  
 solubility and, I, 170.  
 thermal properties and, I, 356.  
 velocity of sound and, I, 14.  
 viscosity and, I, 388.
- Contraceptives, effectiveness of measures with, III, 892.
- Convulsions, after spinal cord freezing, III, 672.  
 cardiazol. See under Cardiazol.  
 cortical extinction in, III, 18.  
 electrically induced, electroencephalogram in, in rabbits, III, 585.  
 ether, III, 260, 336.  
 generalised, cerebral circulation disturbances in, III, 667.  
 nephritic, treatment of, with magnesium sulphate, intravenously, III, 711.  
 of anaesthesia, III, 924.  
 polyneuritic, produced by lactic and pyruvic acid injection, III, 700.  
 prevention of, with phenylephrine, in rabbits, III, 710.  
 produced by remote excitation, III, 377.  
 susceptibility to, effect of bile on, in rats, III, 806.  
 treatment with, blood-pressure during, III, 877.  
 re-establishment of inhibited conditioned reflexes by, III, 884.
- Cooling, Newton's law of, specific heat and, I, 200.
- Co-ordination, basic patterns of, self-differentiation of, III, 109.  
 motor, development of, rôle of sensory control in, III, 301.
- Co-ordination compounds. See under Compounds.
- Copper, catalytic action of, with thorium, in formation of methane and heavy gases, I, 244.  
 co-precipitation of, with lead sulphate, I, 154.  
 corrosion of, effect on, of ultrasonic waves, I, 333.  
 in phosphoric acid solutions, I, 371.  
 corrosion and electrode potential of, I, 64.  
 crystals, secondary-electron emission from, I, 136.  
 distribution of dissolved oxygen in, I, 263.  
 lattice structure and thermal expansion of, I, 321.  
 optical constants of, I, 316.  
 oxidation of, I, 243.  
 scattering of X-rays from, by zinc crystals, I, 389.  
 self-diffusion in, mechanism of, I, 262.  
 spectrum of, arc, I, 185, 186.  
 thermal expansion of, I, 50.
- Copper alloys, with aluminium, eutectoid, transformation in, I, 17.  
 with antimony,  $\beta$ -phase of, I, 53.  
 with antimony and nickel, I, 93.  
 with cadmium, catalytic action of, I, 333.  
 with gold, I, 169, 323.  
 thermal expansion of, I, 17.  
 with iron and nickel, constitution of, I, 18.  
 with manganese, conductivity and hardness of, I, 53.  
 with zinc, diffusion formation of, I, 358.  
 with zirconium, I, 53.
- Copper compounds, in blood. See under Blood.  
 in vaccine virus, III, 353.  
 toxicity of, to plants, effect of aluminium compounds on, III, 800.  
 treatment with, in mixtures with nicotine, of parasitic gastritis in lambs, III, 631.  
 of skin infections, III, 167.
- Copper salts, basic, magnetochemistry of, I, 304.  
 catalysis by, of nitrile syntheses, II, 95.  
 effect of, on ringworm fungi, III, 481.  
 reaction of, with ethyl iodide, I, 149.  
 with alkalis, double basic, I, 69.
- Copper chromites, catalytic action of, I, 333.  
 nitride, crystal structure of, I, 290.  
 tungstate, formation of, in solid state, I, 275.
- Copper:—  
 Cupric ions, diffusion and hydration of, in solution, I, 360.  
 Cupric chloride, crystallisation of, in presence of protein, III, 264.  
 hydroxide, hydrated, I, 237.  
 nitrate, calorimetry of aqueous solutions of, I, 175.  
 paramagnetism of solutions of, I, 201.  
 oxide, combination of, with tungsten oxide, I, 275.  
 sulphate, basic, I, 237.  
 diffusion coefficient of, I, 202.  
 iontophoresis of, in mycotic infection, III, 413.  
 oxidation by, of ascorbic acid, I, 332.  
 with nicotine sulphate, anthelmintic action of, III, 414.
- Cuprous compounds, equilibrium between cupric compounds and, in presence of copper, I, 173.
- Cuprous ions, complex, with glycine, I, 398.
- Cuprous chloride, reaction of, with silver sulphide, I, 63.
- Copper organic compounds:—  
 Copper complexes with diethylenetriamine, I, 245.  
 phenyldiguanidines, and their salts, II, 254.
- Cupric aldimines, and their salts, extinction curves for, I, 385.  
 ferrocyanide, membranes. See under Membranes.
- Copper detection, determination, and separation:—  
 detection of, with luminol, I, 153.  
 with  $\alpha$ -naphthylamine, I, 340.  
 with oxanilic acid thioamide, I, 184.  
 determination of, colorimetrically, I, 376.  
 conductimetrically, with  $\alpha$ -benzoinoxime, I, 278.  
 in plant materials, III, 656.  
 in presence of cadmium, I, 278.  
 in presence of iron, I, 248.  
 in zinc, I, 154.  
 volumetrically, with ceric sulphate, II, 244.  
 with photographic emulsions, I, 248.  
 with quinoline-8-carboxylic acid, I, 184.  
 separation of, from lead and zinc, I, 278.
- Copper ores, Cœur d'Alene, Idaho, I, 344.  
 Jefferson City, Montana, I, 344.  
 Mansfield deposits of, I, 344.  
 Mount Oxide, Queensland, I, 122.
- Copper powder, sintering of, in relation to adsorption of dyes, I, 235.
- Coprecipitation, ageing and, I, 325, 362.
- Coprophagy in rabbits, III, 317.
- Coproporphyrin, determination of, in urine, hæmatoporphyrin as standard for, III, 899.
- Coprosterol, constitution of, II, 366.  
 $\beta$ -glucoside, II, 352.
- epiCoprosterol  $\beta$ -glucoside, and its tetra-acetate, II, 352.
- Coqui, tuber of. See *Cyperus rotundus*.
- Cor biloculare, with solitary aortic trunk, III, 506.
- Coral, dermatitis from, III, 337.
- Coramine, action of, III, 167.  
 on blood volume, III, 87.  
 on coronary vessels, III, 841.  
 central and peripheral circulatory effects of, III, 261.  
 detection of, III, 261.
- Cordierite, optical properties of, I, 218.
- Coreopsis, II, 421.
- Coreopsis gigantea, pigments of, III, 360.
- Corks, bark, treatment of, I, 412.
- Corn, sweet. See *Zea mays*.
- Corn germ, sterol of, deterioration of, III, 359.
- Corn oil, disappearance of, effect of testosterone injection on, III, 815.
- Corneal disease. See under Diseases.
- Corona, positive phenomena in, I, 223.  
 solar, spectrum of, I, 253.
- Coronadite, I, 345.
- Coronene, spectrum of, absorption, ultra-violet, I, 288.
- Corpora amylacea, prostatic, composition of, III, 126.
- Corpora cardiaca, insect chromatophore activity of, III, 599.

- Corpora quadrigemina**, superior, optic pathways of, III, 673.
- Corpus callosum**, commissural fibre distribution in, in macaques, III, 585.
- section of, in relation to visual function, III, 212.
- Corpus luteum**, III, 135.
- alcoholic extracts of, antigenic relationship of, to those of testis and brain, III, 134.
- effect on, of placenta, in mice, III, 135.
- formation of, by luteinising hormone and antigonadotropic serum in persistent oestrous rats, III, 384.
- functional, persistent, III, 453.
- growth and regression of, during oestrous cycle in rats, III, 600.
- hormone of, action of, on uterus, latent period of, III, 891.
- human, fluid of, in pregnancy, III, 234.
- lipins of, III, 750.
- size variations of, in albino rats, III, 814.
- true, statistics of, III, 311.
- volume changes in, effect of hysterectomy and oestrogen on, in pregnant rabbits, III, 134.
- Corpus mamillare**, tumour of, genital hypertrophy associated with, in infancy, III, 811.
- Corpuscle of Stannius**, development and phylogeny of, in fishes, III, 506.
- Corrosion**, electrochemical theory of, I, 268.
- Corrosion pits, synthetic, I, 107.
- Corti's organ**. See under Ears.
- Corticosterone**, acetate, effect of, on insulin hypoglycaemia and liver-glycogen in adrenalectomised mice, III, 121.
- synthetic compounds resembling, II, 18.
- Cortilaetin**, III, 121.
- Cortin compounds** of naphthalene series, II, 96.
- Corydalis cheilanthifolia**, alkaloids of, II, 275.
- Corydalis montana**, alkaloids of, III, 502.
- Corynebacterium diphtheriae**, effect on, of sulph-anilamide, sulphapyridine, and sulphathiazole, III, 545.
- growth of, in Löfller's medium, III, 646.
- infections by, bacteriostatic action of sulphonamides on, III, 161.
- isolation of, media for, III, 493.
- staining of granules in, III, 493.
- Corynebacterium diphtheriae** var. *mitis*, virulence of, III, 176.
- Coryza**, infectious, treatment of, with sulphathiazole, in fowls, III, 840.
- Cosmarium pachydermum**, development of, effect of micro-organisms on, III, 344.
- Cosmos sulphureus**, pigments of, II, 421.
- Costochondral junction**. See under Ribs.
- Cotton**, use of, for sutures, III, 723.
- Cotton dust**, effect of, on workers, III, 638.
- Cotton fibres**, cellulose particles in plastids of, III, 279.
- development of, III, 279.
- sorption of micro-heterogeneous systems by, I, 55.
- Cotton lint**, green, wax content of, III, 501.
- Cotton plants**, leaves, hydration in, III, 947.
- mineral content of, III, 947.
- mineral partition in, III, 948.
- polyploids in, induced by colchicine, III, 74.
- Punjab-American, partial failures of, in Punjab, III, 859.
- root-rot fungus of. See *Phymatotrichum omnivorum*.
- Cottonseed**, amino-acid content of proteins of, III, 356.
- globulin, amino-acids of, III, 358.
- Cottonseed oil**, hydrogenated, nutritive properties of, III, 404.
- sarcoma production by, in mice, III, 463.
- Cottonwood**. See *Populus macdougalii*.
- Coumaran**, derivatives, II, 234.
- Coumaran series**, orientation in, II, 373.
- Coumarin**, detection of, III, 75.
- Coumarin**, 7-hydroxy-3-cyano-, II, 419.
- Coumarins**, II, 235, 268.
- from  $\alpha$ -acetylthylresorcinol and  $\beta$ -ketonic esters, II, 108.
- from pyrogallol and from quinol derivatives, II, 201.
- natural, II, 420.
- Coumarins**, reactivity of, II, 420.
- substituted, benzopyrylium salts from, II, 109.
- synthesis of, II, 374.
- Coumarones**. See Benzofurans.
- Coumarone-1:2-dicarboxylic acids**, synthesis of, II, 107.
- Coumingidine**, and its derivatives, and nitroso-, II, 210.
- Coumingine**, II, 121.
- susceptibility to, of warm-blooded animals, III, 709.
- Counters**, electron, proportional, amplification for, at low voltages, I, 280.
- Geiger, resolving times in, I, 213.
- sensitivity of, I, 158.
- Geiger-Müller, Barnes, modification of, I, 213.
- circuit for, III, 951.
- discharge mechanism of, I, 186.
- for photo-electrons, I, 281.
- helium-filled, I, 187.
- portable, III, 951.
- self-recording, circuit for, I, 158.
- self-quenching, directional properties of, I, 187.
- discharge of, I, 186.
- temperature coefficients in, I, 281.
- uses of, I, 187.
- Cows**, blood picture in, effect of parturition on, in health and infection, III, 434.
- body size of, in relation to milk production, III, 396.
- dairy, blood-fat of, III, 799.
- fat percentage and yield of, effect of pituitary preparation on, III, 526.
- ovulation, oestrus, and reproduction in, effect of phosphorus and protein-deficient rations on, III, 468.
- See also Cattle, dairy.
- normal and sterile,  $pH$  of vaginal mucus of, III, 454.
- reproduction in, ascorbic acid in relation to, III, 472.
- Cowpeas**. See under Pea plants.
- Cozymase**, sugar of, III, 641.
- Crabs**. See *Uca pugilator*.
- kelp. See *Pugellia producta*.
- Crabo**, chromatophore types in, and their endocrine control, III, 599.
- Cranium**. See Skull.
- Crater lake**, chemical, optical, and plankton characteristics of, III, 643.
- Crayfish**, micturition in, III, 756.
- sinus gland extirpation in, without eyestalk removal, III, 902.
- Creatine**, conversion of creatinine into, in urine, III, 33.
- determination of, in muscle, by dinitrobenzoate, III, 736.
- excretion of, and creatinine, after creatine feeding, III, 623.
- excretion and retention of, effect of thyroidectomy on, in rats, III, 744.
- formation of, in chicks, III, 257.
- in muscle. See under Muscle.
- origin of, in muscle, III, 880.
- relation of, and creatinine, to water, salt, and phosphate metabolism, III, 331.
- retention capacity for, of boys, in relation to androgen function, III, 752.
- Creatinine**, conversion of, into creatine in urine, III, 33.
- excretion of, and creatine, after creatine feeding, III, 623.
- in women, III, 756.
- excretion and retention of, effect of thyroidectomy on, in rats, III, 744.
- in blood. See under Blood.
- relation of, and creatine, to water, salt, and phosphate metabolism, III, 331.
- Creatinuria**, due to thyroid therapy, in hypothyroid infants and children, III, 684.
- effect of quinine on metabolism in, III, 376.
- Cresol**, colloid chemistry of mixtures of soaps, water, and, I, 142.
- o-Cresol**, 2-chloro-1-hydroxy-, derivatives of, II, 358.
- m-Cresol**, 6-chloro-4-amino-, and its derivatives, II, 308.
- p-Cresol**, 2-chloro-4-hydroxy-, II, 358.
- Cresols**, arsenites, II, 343.
- association of, with camphor, I, 22.
- o-Cresolsueinein**, and its anhydride, II, 119.
- Cretninism**, effect on, of pituitary hormone, III, 310.
- of typhoid inoculation, III, 26.
- Creutzfeldt-Jakob disease**. See Sclerosis, pseudo-spastic.
- Cricetus auratus*, eggs of, III, 80.
- Cricetus cricetus*. See Hamsters.
- Cristobalite** in lavas of Puy chain, I, 252.
- Critical constants**, calculation of, I, 322.
- Critical state**, I, 167.
- Critical temperature**, nomographs for mol. refraction and, I, 289.
- Crotalaria grantiana*, alkaloid of, II, 275.
- Crotalus terrificus*, venom of, effect of, on blood pressure, III, 169.
- Croton oil**, toxic substance of, III, 723.
- Croton sparsiflorus*, seeds, constituents of, III, 501.
- Crotonic acid series**, II, 225.
- Crotonin**, electrophoresis of, III, 934.
- 4-Crotyloxybenzoic acid**, 3:5-dichloro-, and its rearrangement, II, 283.
- O-Crotylsalicylic acid**, 3:5-dichloro-, rearrangement of, II, 258.
- Crucibles**, porcelain, cleaning of, I, 379.
- Crush syndrome**, III, 514.
- renal lesions in, III, 320.
- Crushing**, injury from, myohæmoglobin in urine after, III, 246.
- recovery from, III, 320.
- renal tubule obstruction in, III, 320.
- shock from, treatment of, with plasma and ice, III, 878.
- with renal failure, III, 756.
- Crustaceans**, chemical mediation in, III, 112.
- hormones in, III, 450.
- serology of, III, 857.
- Cryolite**, natural and synthetic, fluorine assimilation by rats from, III, 907.
- Cryptocercus punctulatus*, anaerobic gaseous metabolism of, III, 623.
- Cryptococcus hominis*. See *Torula histolytica*.
- 3:2-Cryptopyrryl-1-methyldioxindole**, II, 63.
- Cryptorchidism**, double, treatment of, with chorionic gonadotropin, in colts, III, 314.
- treatment of, III, 604.
- with endocrines, III, 690.
- Cryptostadiene**, II, 59.
- Cryptostenediol**, II, 58.
- Cryptostenedione**, II, 58.
- Cryptosterol**, and its derivatives, II, 58.
- isoCryptosterol**, and its acetate, II, 58.
- Crystals**, adsorption at interfaces of solutions and, I, 94.
- adsorption of vapours by surfaces of, I, 324.
- amphisymmetry of, etching figures of, I, 347.
- artificial stress formation in, I, 12.
- colour in, induced by deutron bombardment, I, 391.
- cubic, Faxén-Waller theory and surfaces of isodiffusion for, I, 198.
- cubic and spherical, "notable points" on, I, 199.
- diffraction by, of monochromatic X-rays, I, 135.
- diffusion in, I, 199, 231.
- disperse structure of, I, 391.
- elastic, theory of finite deformation of, I, 391.
- elastic constants of, I, 45.
- electron diffraction patterns of, spots in, I, 231.
- ferromagnetic. See Ferromagnetic crystals.
- for optical use, production of, I, 180.
- Fourier analysis of, I, 45.
- Gibbs-Thomson equation applied to, I, 331.
- growth of, I, 87, 199.
- theory of, I, 291.
- inelastic scattering of neutrons by, I, 382.
- ionic, electric breakdown of, I, 227.
- Langvin theory and anisotropy of, I, 261.
- large, growth of, I, 214.
- lattice curvature and fragmentation in, I, 11.
- layer lattices of, X-ray patterns of, I, 230.

- Crystals, liquid, I, 10.**  
 clear and transition points in homologous series of, I, 139.  
 orientation of, by rubbed surfaces, I, 291, 356.  
 metallic, X-ray reflexions of, I, 86.  
 migration in, I, 90.  
 mixed, anomalous, I, 201, 294.  
 models of, I, 215.  
 non-cubic, structure of, X-ray determination of, I, 135.  
 opaque and translucent, refraction patterns of, I, 11.  
 organic, molecular rotation in, I, 356.  
 orientation of films on, I, 354.  
 orientation of Widmanstetter figures in, I, 283.  
 perfect, diffraction maxima with, I, 389.  
 photographs of, Laue, I, 290.  
 plastic properties of, I, 137.  
 polarisation of luminescence in, I, 258.  
 poly-, elasticity of, with viscous grain boundaries, I, 137.  
 powdered, holder for samples of, I, 250.  
 X-ray analysis of, data for, I, 318.  
 X-ray patterns of, reflexions in, I, 134.  
 X-ray photographs of, diffuse spots in, I, 135, 166.  
 X-ray reflexions in, I, 134, 135.  
   Raman, at low temperatures, I, 86.  
 X-ray scattering by, I, 135, 166, 198, 389.  
 single, electron diffraction and X-ray diffraction patterns of, I, 291.  
 small, anomalous powder patterns of, I, 47.  
 230 space-groups in, I, 318.  
 specific heat of, I, 318.  
 spectra of, frequency, I, 260.  
   Raman, I, 289.  
     excited by mercury radiation, I, 387.  
 structure of, by X-ray methods, I, 290, 389.  
 film-contraction errors in measurement of, I, 116, 281.  
 Fourier series technique for, I, 355.  
 photographing of, I, 116.  
 stability of, I, 136.  
 study of, projection sphere for, I, 199.  
 temperature-diffuse scattering in, I, 259.  
 thermal energy of, I, 226.  
 water of crystallisation in, infra-red absorption spectra of, I, 287.  
**Crystal-violet, spectrum of, absorption, I, 386.**  
**Crystalline compounds, physico-chemical properties and symmetry of, I, 389.**  
**Crystallography, concept of unique diameters in, I, 199.**  
 X-ray, I, 212.  
**Crystalluria, due to sulphathiazole and sulphapyrimidine, III, 260.**  
**Cucumber virus, aromatic amino-acids in, III, 69.**  
 preparation and properties of, III, 69.  
*Cucurbita pepo*, gaseous exchange in seeds of, III, 947.  
**Cullen's sign, III, 438.**  
**Cultures, collagen-forming, implantation of, in granulation tissues, III, 190.**  
**Culture media, alkaline reserve variations in, produced by tissue growth, III, 85.**  
 for bacteriology, III, 644, 779.  
**"Cundeamor." See *Momordica charantia*.**  
*apocupreine 6- $\beta$ -alkylthioethyl ethers*, II, 336.  
**Curare, action of, on brain in frogs, III, 805.**  
 calabash, II, 156.  
 derivatives, activity of, prepared in liquid ammonia, III, 712.  
 effect of, on respiratory centre, III, 442.  
 synthetic compounds like, III, 921.  
 See also Intocostrin.  
**C-Curarine I, and C-bromo-, and C-nitro-, derivatives of, II, 156.**  
**C-Curarine II, and its salts, II, 156.**  
**C-Curarine III, and its salts, II, 156.**  
**Cushing's disease, treatment of, with stilboestrol, III, 689.**  
 with testosterone propionate, III, 452.  
*isocyanic acid*, antimony, arsenic, and phosphoryl salts, I, 406.  
**Cyanines, spectra of, absorption, II, 238.**  
 *$\psi$ -isocyanine*, arrangement of molecules in aggregates of, I, 199.  
**Cyanine dyes, of pyridine series, II, 329.**  
 **$\alpha$ -Cyano-esters, synthesis of, II, 246.**  
**Cyanogen, reaction of, with hydrogen at high temperatures, I, 400.**  
**Cyanogen chloride, spectrum of, Raman, I, 165.**  
 halides, I, 110.  
**Hydrocyanic acid, ammonium salt, reaction of, with allylacetone, II, 249.**  
 derivatives, in organs after death from barbituric acid derivatives, III, 46.  
 ethyl and methyl esters, pyrolysis of, II, 279.  
 formation of, by bacteria, III, 169.  
 by electric discharge in wood gas, I, 371.  
 heavy metal iron salts, X-ray diffraction by, I, 199.  
 potassium salt, fermentation inhibition by, III, 848.  
 reaction of, with  $\alpha$ -chloroketones, II, 326.  
 potassium and sodium salts, heat capacities of, I, 49.  
 silver salt, infra-red absorption spectrum of, I, 257.  
 sodium salt, evaporation of aqueous solutions of, I, 246.  
 spectrum of, Raman, I, 289.  
 structure of, I, 246.  
 substance yielding, from oxidation of ammonia and formaldehyde, II, 302.  
 treatment with, of apples, III, 358.  
**Cyanides, detection of, with luminol, I, 153.**  
 poisoning by. See under Poisoning.  
 spectrum of, Raman, I, 258.  
**Cyanohydrins, reaction of, with aldehydes, I, 204.**  
**Cyclic compounds, condensed, synthesis of, II, 313, 319.**  
 kinetics of formation of, I, 148.  
 number of isomerides in, II, 354.  
**Cyclical activity, recording apparatus for, in rats, III, 502.**  
**Cyclitols, II, 363, 364.**  
**Cyclopegia, homatropine-benzedrine, eserine action during, III, 448.**  
**Cyclopegics, III, 448.**  
**Cyclotron, 184-in., at Berkeley, California, I, 186.**  
 theory of, I, 158.  
 use of elkonite for, I, 308.  
*Cydonia japonica* and *maulei*, constituents of, III, 950.  
**Cygni, hydrogen emission in, I, 254.**  
 **$\alpha$ -Cygni, spectrum of, I, 310.**  
**Cymarin, susceptibility to, of warm-blooded animals, III, 709.**  
***p*-Cymene, II, 167.**  
 thermal fission of, II, 304.  
 vapour pressure of, and its derivatives and related compounds, I, 139.  
**Cynthia, cross- and self-fertilisation in, III, 867.**  
***Cyperus rotundus*, constituents of, III, 563.**  
 tubers, constituents of, III, 655.  
**Cyprethylene ether. See cycloPropyl vinyl ether.**  
**Cypridina, luciferin from, reaction of, with azides, III, 716.**  
 luminescence of, inhibited by sulphonamides and urethane, III, 716.  
 kinetics of, III, 716.  
**Cysts, from sesame and peanut oils, stilboestrol and theelin absorption from, III, 524.**  
 retroperitoneal, containing ovarian remnants, III, 313.  
**Cystamine, purine and pyrimidine derivatives from, II, 37.**  
***l*-(+)-Cysteic acid decarboxylase, III, 847.**  
 in dog's liver, III, 818.  
**Cysteine, complex of, with dehydroascorbic acid, II, 187.**  
 determination of, with *o*-iodosobenzoic acid, II, 44.  
 enzymic reaction of, with radioactive sulphide-sulphur, III, 776.  
 formation of, from *l*-S-( $\beta$ -amino- $\beta$ -carboxy-ethyl) homocysteine, III, 623.  
 from homocysteine and serine by rat-liver tissue, III, 835.  
 synthesis of, from silk, II, 5.  
 use of, by rat liver with hydrogen sulphide production, III, 408.  
**Cystic disease. See under Diseases.**  
**Cysticercosis, experimental, effect on, of atebirin, in mice, III, 162.**  
**Cystine, content of, effect on, of iodoacetic acid dosage in rats, III, 541.**  
 detection of, II, 243.  
 determination of, in edible Bengal fishes, III, 901.  
   in proteins, II, 292.  
   in urine, polarographically, III, 322.  
 dietary, effect of, on reaction of mice to methylcholanthrene, III, 148.  
 effect of, on liver-lipins in rats, III, 755.  
 lactation-promoting properties of, in casein diets, III, 904.  
 liberation of, in enzymic proteolysis, III, 847.  
 prevention of hepatic hæmorrhage and necrosis by, III, 897.  
 replacement of methionine by, for growth, III, 252.  
 synthesis of, III, 257.  
 use of, by rat liver, with hydrogen sulphide production, III, 408.  
***l*-Cystine, optical rotation of, II, 190.**  
**Cystinuria, III, 331.**  
 canine, effect on, of cysteine, cystine, and methionine at different protein levels, III, 623.  
**Cystitis, biochemistry of organism causing, III, 645.**  
**Cyto-antibodies. See under Antibodies.**  
**Cytochrome-*b*<sub>2</sub>, III, 640.**  
**Cytochrome-c, determination of, III, 428.**  
 in tumours, III, 825.  
**Cytochrome oxidase. See under Oxidase.**  
**Cytochrome-c peroxidase. See under Peroxidase.**  
**Cytochrome reductase. See under Reductase.**  
**Cytoplasm, hydrostatic pressure effects on, III, 84.**  
**Cyverine hydrochloride, alopecia from, III, 926.**

## D.

- D-140. See Demerol.**  
**Daboia, venom, coagulant action of, mechanism of, III, 573.**  
**Dahlia, fructose from, III, 655.**  
**Dairy science, III, 238.**  
**Dandruff, human, sensitivity to, in man, III, 499.**  
**Daphnia, cardiac inhibition of, and action of acetylcholine and physostigmine, III, 665.**  
 regenerating, allometry in, III, 867.  
**Daphnia magna, action on, of drugs, III, 769.**  
 eggs, development of, III, 284.  
**Deacetylscillirosidic acid, methyl ester, and its derivatives, II, 279.**  
**Deacetylscillirosidic acid, methyl ester, and its derivatives, II, 279.**  
**Deaf, Pennsylvania School for the, pupils of, III, 683.**  
**Deafness, biologic, allergy in, III, 683.**  
 effect on, of progstigmene, III, 520.  
 in aviation, III, 592.  
 inheritance of, III, 683.  
 middle ear, III, 682.  
 nerve, treatment of, III, 682.  
 occupational, audiometry of aural fatigue and recovery in, III, 683.  
 of school children, III, 592.  
 treatment of, by radium, III, 683.  
 non-surgical, III, 520.  
**Deaminase, adenosine, III, 776.**  
**Deaminocasein, coagulation of, I, 365.**  
**Debaryomyces guilliermondii and tyrocola, III, 555.**  
**Debye-Scherrer lines, integral breadths of, I, 318.**  
***n*-Deca- $\Delta^{27}$ -diene- $\Delta^{26}$ -di-ienoic acid, methyl ester, II, 1867.**  
**Decahydronaphthalene, 1:5-di-hydroxy-, II, 90.**  
***cis*- and *trans*-Decahydronaphthalenes, heat of combustion of, I, 100.**  
 viscosity of, I, 392.  
**Decahydro-1-naphthoic acid, II, 96.**  
**Decahydro-2-naphthyl acetoxymethyl ketone, II, 406.**  
 **$\beta$ -Decahydro-2-naphthyl- $\Delta^2\beta$ -butenolides, II, 406.**

- $\lambda$ -*a*-Decahydronaphthylheneicosane, II, 125.  
*Decalepis hamiltonii*, resinols of, III, 278.  
*cis*- and *trans*-Decalins, magnetic susceptibilities of, I, 231.  
*spiro*Decane, preparation and dehydrogenation of, II, 85.  
Decane- $\beta$ -dione, II, 300.  
*n*-Decane- $\alpha$ -disulphonic acid, and its *m*-toluidine salt, II, 129.  
Decane- $\alpha$ , $\epsilon$ - $\kappa$ -tetracarboxylic acid, II, 252.  
*n*-Decan- $\gamma$ -ol,  $\beta$ -nitro-, II, 295.  
Deciduomata, hormonal control of, III, 751.  
production of, in pregnant lactating rats, III, 137.  
Decoic acid, sodium salt, hydrolysis of, I, 296.  
Decoic acid, *i*-bromo-, and *i*-iodo-, and their methyl esters, II, 344.  
 $\alpha$ -hydroxy-, *p*-bromophenacyl, *p*-nitrobenzyl, phenacyl, and *p*-phenylphenacyl esters, II, 74.  
 $\epsilon$ -*Go*-trihydroxy-, and its derivatives, II, 392.  
Decomposition, double, in absence of solvents, I, 63.  
*n*-Decophenylhydrazide, II, 215.  
Decylamine hydrochloride, electrical conductivity of aqueous solutions of, I, 299.  
 $\lambda$ -*n*-Decyl-*n*-docosane, II, 341.  
 $\lambda$ -*n*-Decylheneicosane, II, 125.  
Decylcyclohexanol,  $\kappa$ -hydroxy-, II, 392.  
1-Decyl- $\Delta^1$ -cyclohexene,  $\kappa$ -hydroxy-, and its derivatives, II, 392.  
2-De-ethylchlorophyllin- $\epsilon$ , trimethyl ester, 2-formyl derivative, II, 207.  
Deformation, law of, I, 85, 90.  
Deglutition, mechanism of, III, 752.  
radiology of, III, 865.  
Deguelin, m.p. of, II, 111.  
Dehydration, from salt loss, compared with that from water deprivation, III, 258.  
ketosis and, III, 45.  
plasma volume changes and interstitial fluid in, III, 916.  
treatment of, in infancy, III, 242.  
Dehydrenium, II, 421.  
Dehydrenium salts, II, 375.  
Dehydroabietic acid, and its derivatives, II, 371.  
 $\Delta^1$ -Dehydro- $\Delta^4$ -androstenedione, II, 369.  
 $\beta$ -Dehydroanhydro- $\gamma$ -strophanthidin, II, 397.  
Dehydroascorbic acid, complexes of, with sulhydryl compounds, II, 187.  
determination of, colorimetrically, II, 248.  
Dehydrobacteriophosphoribide- $\alpha$ , conversion of, into chlorophyll *a*, II, 33.  
Dehydrobismaralohydroxycholeic acid, II, 231.  
Dehydro- $\beta$ -cyclocitral, methyl homologue of, II, 175.  
11-Dehydrocorticosterone, 17-hydroxy-, glycosuria produced in rats by, III, 308.  
Dehydrodeoxoglycyrhetic acid, and its methyl ester, II, 418.  
methyl ester, acetate, II, 371.  
Dehydro-3:4-diphenyl-5:6-benz- $\alpha$ -chromone, II, 421.  
Dehydroechinochrome, II, 319.  
Dehydrogenase,  $d$ -amino-acid, action of drugs on, III, 488.  
bacterial, III, 58.  
inactivation of, in oxygen poisoning, III, 101.  
lactic, of yeast, III, 417.  
succinic, in plant tissues, III, 947.  
Dehydrogenation, II, 341, 397.  
Dehydroglycyrhetic acid, and its derivatives, II, 371.  
Dehydrohomopantothenic acid. See  $\beta$ - $\gamma$ -Dimethyl- $\Delta^4$ -pantoamidopropionic acid,  $\beta$ - $d$ -hydroxy-.  
Dehydro-2-hydroxy-2-methylpyrrolizidine, and its picrolonate, II, 287.  
Dehydronorcholene, action of *coli* bacteria on, II, 364.  
Dehydro-oleanolic acid, II, 418.  
7-Dehydrosterols, preparation of, II, 285.  
7-Dehydrostigmastanol, and its benzoate, II, 286.  
 $\alpha$ - and  $\beta$ -Dehydro- $\gamma$ -strophanthin, II, 396.  
Dehydro-*ms*-styryl-1:2:7:8-dibenzoxanthene chloride, and its derivatives, II, 376.  
 $\Delta^1$ -Dehydrodigonene, transformation of, into diosgenin, biologically, III, 257.  
Dehydro-2:3:4-triphenylbenzochromenium perchlorate, II, 421.  
Deiminoleucopterin, II, 33.  
Delirium tremens, blood changes in, III, 198.  
treatment of, III, 110.  
hypertonic saline in, III, 675.  
*Delphinium staphisagria*, alkaloid from, II, 40.  
Delvinal sodium, clinical use of, III, 841.  
effect of, on respiratory metabolism in monkeys, III, 550.  
sedative action of, in psychiatry, III, 925.  
Dementia, middle age, III, 741.  
presenile, familial. See Alzheimer's disease.  
Dementia infantilis with cortical dysrhythmia, III, 884.  
Demerol. See Dolantin.  
Demyelination, III, 378.  
*Dendroster excentricus*, gastrulation in, mechanics of, III, 727.  
Densitometers, I, 341.  
non-recording, I, 214.  
Density, measurement of, apparatus for, I, 183.  
in closed systems, I, 251.  
pycnometrically, I, 392.  
Dental caries, dietary repair of, III, 326.  
effect on, of fluorine compounds, III, 537, 828.  
in city children, relation of, to sex, age, and environment, III, 186.  
in London children, III, 699.  
incidence of, effect of vitamin-C in, in calcified teeth, III, 763.  
induced, in rats, III, 926.  
prevention of, by vitamin-D dosage, III, 540.  
treatment of, by mineral salts, III, 537.  
Dental enamel, developmental defects in, III, 566.  
radioactive phosphorus distribution in, III, 334.  
Dental fluorosis. See under Fluorosis.  
Dental pulp, blood vessels of, III, 429.  
Dentate nucleus. See under Brain.  
Dentine, apposition of, effect of magnesium deficiency on, in rats, III, 828.  
fibre of, development and structure of, III, 83.  
investigation of, by optical polarisation, III, 247.  
Dentition, deciduous, derangements of, III, 658.  
Deoxobutofalane, and 3-hydroxy-, II, 323.  
Deoxo- $\beta$ -elemic acid, II, 267.  
Deoxomethylpyrophosphoribide- $\alpha$ , 9-hydroxy-, II, 34.  
 $\beta$ -Deoxosiaresinonic acid, and its methyl ester, II, 418.  
Deoxybenzoin, derivatives, I, 362.  
Deoxybenzoin, 3-amino-, 3-hydroxy-, and 3-nitro-, II, 9.  
4:4'-dicyano-, II, 174.  
Deoxybilanic acid, pernitroso-, II, 263.  
Deoxycantharidin, synthesis of, II, 142.  
Deoxycholeic acid, preparation of, II, 365.  
and its derivatives, II, 412.  
12-*epi*Deoxycholeic acid. See Cholanolic acid, 3( $\alpha$ ):12( $\alpha$ )-dihydroxy-.  
Deoxycodine C, and their methiodides, II, 158.  
Deoxycorticosterone acetate, administration of, III, 596.  
anti-tumoral action of, III, 465.  
effect of, on blood pressure of dogs, III, 595.  
on capillary permeability, III, 450.  
on circulation, in dogs, III, 307.  
on glucose tolerance in Addison's disease and normal persons, III, 685.  
on post-operative shock, III, 888.  
for shock prevention, III, 809.  
oestrogen-like action of, on electrocardiogram in hypo-ovarianism, III, 812.  
polydipsia and polyuria induced by, III, 121.  
pre-operative administration of, in surgical shock prevention, III, 121, 745.  
pretreatment with, against uraemia, III, 121.  
protective action of, in adrenalectomised mice exposed to low temperatures, III, 809.  
replacement therapy with, in adrenal cortical insufficiency, III, 382.  
Deoxycorticosterone acetate, requirement of, for adrenalectomised dogs, III, 308.  
synthetic, antifibromatogenic action of, III, 757.  
treatment with, after adrenalectomy, III, 307, 308.  
effect of, on organ size, III, 26.  
of Addison's disease, sublingually, III, 888.  
of adrenal cortex insufficiency, III, 888.  
effect of, on body salts and water, antagonistic to pituitary, III, 121.  
on body-weight of frogs, III, 121.  
on cancer incidence in mice, III, 149.  
on endometrium in monkeys, III, 140.  
on muscle-glycogen phosphorylation, III, 583.  
on pituitary and lactogen content, III, 27.  
on renal excretion of creatinine, vitamin-C, and water, III, 145.  
glucosides of, II, 219.  
 $\beta$ -glucoside, tetraacetate, II, 134.  
reduction of, to pregnanediol in rabbits, III, 888.  
See also Adrenal cortex, hormone of.  
11-Deoxycorticosterone, 6( $\alpha$ )-hydroxy-, diacetate, II, 26.  
treatment with, effect of, on body weight and work performance of adrenalectomised rats, III, 595.  
Deoxydeoxoglycyrhetic acid, and its methyl ester, II, 418.  
14-Deoxydigitoxinigenin. See  $\Delta^{20:22}$ -Norcholanolactone, 3( $\alpha$ ):21-dihydroxy-.  
Deoxydihydroisostrychnine perchlorate, II, 386.  
Deoxyinositol. See cycloHexane, pentahydroxy-.  
Deoxymesopropophosphoribide- $\beta$ , methyl ester, 3-methanol of, II, 34.  
Deoxypantothenic acid, See  $\beta$ - $\beta$ -Dimethylbutyramidopropionic acid,  $\beta$ - $\gamma$ -hydroxy-.  
Deoxyisostrychnine, and bromo-, and its hydrobromide, II, 385.  
14-Deoxythetigenin, and its acetate, II, 415.  
Deoxyvomicine, and its acetate, II, 385.  
*neo*Deoxyvomicine, II, 385.  
Depression, mental. See Mental depression.  
Depropanex, treatment with, of ureteric spasms, III, 393.  
Dermatitis, arsenical, treatment of, with ascorbic acid, III, 551.  
atopic, III, 561.  
cocobole wood, III, 71.  
contact, III, 561, 946.  
due to codeine, III, 843.  
due to cod-liver oil, III, 784.  
due to emetine hydrochloride, III, 721.  
coral, III, 337.  
due to adhesive tape, III, 858.  
due to antiseptic oils, III, 712.  
due to chemicals in fabrics, III, 638.  
due to chloracetophenone, III, 721.  
due to cutting oils, III, 170.  
due to fat-free and lactoflavin-deficient diets, III, 909.  
due to *Grevillea banksii* blossoms, III, 784.  
due to imitation leather, III, 785.  
due to inguinal truss, III, 357.  
due to ink eradicator and cosmetic lacquers, III, 337.  
due to liquid lipstick, III, 552.  
due to 2-methyl-1:4-naphthaquinone, III, 637.  
due to nail lacquer, III, 169, 275, 785.  
due to resin finishes, III, 638.  
due to resin-finished underwear shorts, III, 843.  
due to soap adherent to platinum ring, III, 843.  
due to tar-paper storage bags, III, 638.  
exfoliative, due to sulphathiazole, III, 480.  
infantile. See Ritter's disease.  
generalised, from nail polish, III, 337.  
in pyridoxine-deficient rats, III, 471.  
in tanneries, III, 485, 638.  
match, III, 357.  
merthiolate, III, 357.  
mesquite wood, III, 356.  
nickel, of left forearm from zippers, III, 721.  
of eyelids, due to philodendron plants, III, 784.



- Dermatitis**, poison ivy, III, 71, 356, 357, 651.  
immunisation against, III, 71.  
prophylaxis against, in children, III, 946.  
solubility of fraction producing, III, 356.  
prevention of, by biotin, in turkey poults, III, 540.  
relapsing, acute, due to nail varnish, III, 772.  
resin, from new unlaundered underclothing, III, 552.  
sodium hypochlorite, III, 337.  
treatment of, with sulphonamides, externally, III, 706.  
See also Eruptions and Skin disease.
- Dermatitis linearis migrans**, treatment of, with chenopodium and olive oils, III, 48.
- Dermatitis venenata**, due to nail lacquer, III, 337.
- Dermatology**, endocrines in, III, 450.  
photodynamics in, III, 639.
- Dermatophytes**, culture of, from white mice, III, 421.
- Dermatophytosis**, causative relationship of, to thromboangiitis obliterans, III, 296.  
treatment of, with serum, trichophytin, and vaccines, III, 175.
- Dermatosis**, atopic, treatment of, with histamine, III, 412.  
industrial, prevention of, III, 929.  
nutritional, in rats, III, 618.  
occupational, III, 55.  
postclimacteric, male, treatment of, with testosterone propionate, III, 605.  
scaly, due to biotin-low diet in chicks, III, 540.  
treatment of, with lard, III, 332.  
with sulphathiazole, III, 545.  
with vitamin-D, III, 538.  
urinary excretion of nicotinic acid in, III, 910.
- Dermoids**, ovarian, twins in relation to, III, 403.
- Derris**, toxicity of, III, 771.
- Derris robusta**, active principle from, II, 211.
- Desensitisation**, in relation to anticatalysis, I, 372.
- Desiccator**, "lyophilic," III, 788.
- Desmoplastoma ovarii malignum**, III, 467.  
with precocious sexual development, III, 232, 453.
- Desyl thiobenzoate**, II, 172.
- Desylamine**, acetyl derivatives, II, 407.
- Desylthiol**, II, 172.
- $\beta$ -Desylthiopropionic acid**, II, 172.
- Detergents**, effect of, on physiological phenomena especially stellate cells of frog liver, III, 754.  
solubilisation of, I, 172.  
sulphonated oil as, III, 415.  
synthetic, action of, on bacteria, inhibited by phospholipins, III, 850.  
bactericidal action of, III, 939.
- Determinants**, applications of, I, 188.
- Determination problem**, III, 567.
- Detoxication**, II, 140, 143, 334.
- Deuteracetic acid**, preparation and properties of, II, 129.
- Deuterium (heavy hydrogen)**, angle of protons from, I, 255.  
electrolysis of fatty acids containing, I, 273.  
exchange between hydrogen and, in heterogeneous mixtures, I, 103.  
on charcoal, I, 270.  
flames of hydrogen and, I, 147.  
influence of, on enzyme action, III, 715.  
photo-disintegration of, I, 162.  
scattering of neutrons by, I, 191.  
scattering of protons by, I, 162.  
spectrum of, I, 125, 224.  
symmetrically-placed, molecular dissymmetry due to, II, 253.  
thermal diffusion in mixtures of hydrogen and, I, 15.
- Deuterium oxide (heavy water)**, I, 258.  
adsorption of, on glass plates, I, 170.  
density of water and, I, 89.  
determination of, micro-pipette for, I, 281.  
effect of concentration of, on potential of standard cadmium cells, I, 175.  
exchange and transfer of acids, -bases, and salts in mixtures of water and, I, 144.
- Deuterium oxide**, exchange reaction of, with dimethyl diketone, I, 147.  
intestinal absorption of, fluid-circuit theory applied to, III, 259.  
ion product constant of, I, 144.  
semi-micro-pyrometer for, I, 281.  
selenide, transformations in mixed crystals of hydrogen deuterium selenide, hydrogen selenide, and, I, 205.
- Deuterium determination** :—  
determination of, in organic compounds, II, 253.
- Deutero benzene**, spectrum of, absorption, near ultra-violet, I, 385.
- Deuteriochlorin**, dimethyl ester, II, 382.
- Deuterodicarboxylic acids**, preparation and metabolism of, II, 131.
- Deuteroglucobilin**, dimethyl ester, II, 382.
- Deuteromethane**, m.p.-pressure curve of, I, 89.
- Deuterons**, disintegration of heavy elements by, I, 383.  
photo-disintegration of, by radium  $\gamma$ -rays, I, 33.  
scattering by, of neutrons, I, 128.  
virtual state of, I, 313.
- Deuteronitric acid**, Raman effect in, I, 195.
- Deuteroporphyrin**, esters, II, 382.
- Deuteroporphyrin**, chloro-, and nitro-, esters, II, 152.
- Deuterorhodin**, dimethyl ester, II, 382.
- Deuteriosuccinic acid**, ingestion of, III, 835.
- Deuterioxy groups**, spectrum of, I, 38, 223.  
isotope effect in, I, 131.
- Deutoplasm**, amphibian, and its relation to development, III, 81.
- Devic's disease**. See Ophthalmoneuromyelitis.
- 2-Devinychlorin- $c_6$** , trimethyl ester, 2-formyl and -glycol derivatives, and 2-cyano-, II, 207.
- 2-Devinyphosphoribide- $\alpha$** , dimethyl ester, derivatives of, II, 207, 208.
- 2-Devinypropyrophosphoribide- $\alpha$** , acetylation of, II, 383.
- Dewalic acid**, II, 66.
- Dewar vessels**, optical, I, 27.
- Dextrin**, colloidal solutions of, and its hydrolysis products, I, 20.
- Dextrin II**, II, 252.
- $\alpha$ - and  $\beta$ -Dextrins**, Schardinger, mol. wts. of, II, 397.
- Diabetes**, absorption in, of glucose and sodium chloride, III, 576.  
acidosis and coma in, in monkeys, III, 158.  
after cardiazol shock treatment, III, 889.  
amino-acid metabolism in, III, 835.  
carbohydrate metabolism in, effect of aneurin on, III, 908.  
carbohydrate tolerance in, effect of menstruation on, III, 837.  
coma of, aetiology of, III, 409.  
lens changes in, III, 680.  
with blood-sugar of 1600 mg. per 100 ml., III, 665.  
complications in, III, 44.  
deaths from, III, 308.  
diet calculator for, III, 836.  
disturbance in endocrine blood-sugar regulation and, III, 451.  
effect on, of diet, III, 332.  
of glucose addition to diet, III, 915.  
emergencies in, and their treatment, III, 475.  
emotional, in medical and dental students, III, 532.  
endocrine manifestations in, III, 451.  
fat metabolism in, III, 624.  
glucose-nitrogen ratio in relation to, III, 766.  
hyperthyroidism and, III, 381.  
in recruits, III, 321.  
infantile, treatment of, with depot insulin, III, 27.  
inflammation in, III, 158, 292, 797.  
lipoid atrophy in, III, 332.  
metabolism and, III, 44.  
of inflammatory origin, treatment of, with X-rays, III, 384.  
pancreatic, experimental, lipin metabolism in, III, 474.  
influence on, of adrenals and hypophysis, in toads, III, 230.
- Diabetes**, phagocytic activity in, measurements of, III, 796.  
pituitary, treatment of, by diet and insulin, in cats, III, 598.  
pituitary hypertrophy in, perimetric evidence for, III, 590.  
pregnancy and, III, 451.  
prevention of, III, 44.  
production of, by 17-hydroxy-11-dehydrocorticosterone in rats, III, 308.  
Recklinghausen's disease and, III, 624.  
renal, glomerular filtration rate, glucose reabsorption, and blood flow in, III, 820.  
metabolism of, III, 694.  
retinal haemorrhage in, III, 518.  
thyroid enlargement in, in children, III, 118.  
treatment of, sodium and potassium salts in, III, 475.  
with insulin and other preparations, III, 230.  
with insulin-protamine-zinc, III, 382.  
with sex hormones, III, 891.  
with sodium phosphate, III, 551.  
tuberculosis and, III, 648.  
with growth and sexual retardation, treatment of, with pituitary extracts, III, 522.  
with hypertension, treatment of, with aminophyllin, III, 551.  
with liver disease, treatment of, with carbohydrates, III, 694.
- Diabetes insipidus**, hereditary, III, 915.  
in pregnancy, III, 890.  
iodine in blood and urine in, III, 687.  
polyuria and salt intake in, III, 231.  
syndrome simulating, induced by deoxycorticosterone acetate in dogs, III, 746.  
transient, pitressin-inhibiting substance in serum in, III, 687.  
treatment of, with pitressin tannate, III, 599.
- Diabolite**, from Mammoth mine, Tiger, Arizona, I, 220.
- Diacetone alcohol**. See *iso*Hexan- $\delta$ -ol- $\beta$ -one.
- 1:3-Diacetylphenobarbital**, II, 180.
- Diacetyl**, electric polarisation of, I, 43.  
exchange reaction of, with deuterium oxide, I, 147.  
illumination of, radicals produced by, I, 245.  
thermal reactions promoted by, I, 105.
- m*- and *p*-Diacetylbenzenes**, derivatives of, II, 359.
- Di(acetylcarbamidoethyl) disulphide**, *di*- $\beta$ -cyano-, II, 37.
- 7:12-Diacetylcholic acid**, II, 415.
- Diacetyldiketopiperazine**, *di*-*N*-bromo-, II, 32.
- 1:6-Diacetyl-2:3-dimethylindole**, II, 377.
- Diacetylhaematoglucobilin**, dimethyl ester, II, 382.
- Diacetylhaematoporphyrin**, dimethyl ester, II, 382.
- 5:4'-Diacetyl-2-methoxydiphenyl ether**, and its semicarbazone, II, 362.
- Diacetylmorphine**, effect of, on alimentary tract, III, 167.
- $\beta\gamma$ -Diacetyl- $\beta$ -phenyl- $\alpha\delta$ -dimesityl-*n*-butane- $\alpha\delta$ -dione enol**, and its acetate, II, 145.
- +*xy-Diacetyl-2-phenylindole**, II, 377.
- 3:5-Diacetylphloroglucineol 2:6-diacetate**, II, 29.
- NN'*-Diacetylsulphanilyl-L-cystine**, II, 307.
- Diacetyl tetra-acetal**, I, 298.
- ON*-Diacetyl-*O*-tetradecylsphingosine**, II, 189.
- l*-Diacetylthreonic acid**, methyl ester, and its nitrophenylhydrazones, II, 75.
- 3:4'-Diacetyl-3':4:5'-trimethylpyrromethane-5-carboxylic acid**, II, 427.
- Diaferometers**, thermic, III, 563.
- Dial**, *p*-bromo- and *p*-chloro-benzyl derivatives, II, 204.
- 2:5-Dialdehydobenzene-1:4-dicarboxylic acid**, II, 96.
- 4:6-Dialdehydobenzene-1:3-dicarboxylic acid**, II, 96.
- Dialkyl sulphates**, sulphonation by, II, 307, 309.
- Dialkylaminoalkylaryl-thiocarbamides and thio-urethanes**, synthesis of, II, 88.
- Dialkylaminophenylcarbamides**, II, 307.
- Dialkylanilines**, coupling of, II, 281.
- p*-Dialkylbenzenes**, preparation of, II, 84.

- NN'*-Dialkyl-2,2'-dipyrazoleanthronyls, dyeing properties of, II, 205.
- Dialkyl ketones, spectra of, Raman, I, 314.
- Dialkylmalonylguanidines. See 2-Iminobarbituric acids.
- 5:5'-Dialkylloxazolidine-2,4-diones, II, 35.  
anæsthetic action of. See under Anæsthetics.
- Dialkylthiocarbamylthiolacetic acids, II, 350.
- 8:8-Dialkylthiosemicarbazides, II, 350.
- Dialysers, I, 282.
- Diamagnetic anisotropy. See under Anisotropy.
- Diamagnetism of organic compounds, I, 320.
- Diamidines, aromatic, trypanocidal action of, II, 172; III, 629.
- 4:4'-Diamidinoazobenzene, dihydrochloride, II, 173.
- 4:4'-Diamidinobenzanilide, II, 173.
- 4:4'-Diamidinobenzenesulphonanilide, dihydrochloride, II, 173.
- 4:4'-Diamidinobenzhydrol, dihydrochloride, II, 173.
- 4:4'-Diamidinobenzophenone, dihydrochloride, II, 173.
- 4:4'-Diamidinobenzylideneacetophenone, dihydrochloride, II, 173.
- p*-Di-*p*-amidinobenzoyloxybenzene, dihydrochloride, II, 173.
- 4:4'-Diamidinodeoxybenzoin, dihydrochloride, II, 173.
- 4:4'-Diamidinodibenzyl ether, and its dihydrochloride, II, 173.
- 4:4'-Diamidino- $\alpha$ - $\delta$ -diphenoxybutane, dihydrochloride, II, 173.
- 4:4'-Diamidino- $\alpha$ - $\beta$ -diphenoxyethane, dihydrochloride, II, 173.
- 4:4'-Diamidino- $\alpha$ - $\eta$ -diphenoxy-*n*-heptane, and its dihydrochloride, II, 173.
- 4:4'-Diamidino- $\alpha$ - $\zeta$ -diphenoxy-*n*-hexane, dihydrochloride, II, 173.
- 4:4'-Diamidinodiphenoxymethane, dihydrochloride, II, 173.
- 4:4'-Diamidino- $\alpha$ - $\delta$ -diphenoxy-*n*-pentane, and its derivatives, II, 173.  
metabolic disturbances after injection of, in domestic stock, III, 637.
- 4:4'-Diamidinodiphenyl ether, dihydrochloride, II, 173.  
sulphide, II, 173.  
disulphide dihydrochloride, II, 173.
- Di-*p*-amidinodiphenylamine, salts, II, 174.
- 4:4'-Diamidino- $\alpha$ - $\delta$ -diphenylbutadiene, dihydrochloride, II, 173.
- 4:4'-Diamidinodiphenylcarbamide, dimethanesulphonate, II, 173.
- 4:4'-Diamidinodiphenylpropane, dihydrochloride, II, 173.
- 4:4'-Diamidinodiphenylsulphone dihydrochloride, II, 173.
- 4:4'-Diamidinomethyldiphenyl dihydrochloride, II, 173.
- $\alpha$ -Di-*m*-amidinophenoxy-*n*-pentane, dihydrochloride, II, 173.
- $\alpha$ -Di-*m*-amidinophenoxypropane, dihydrochloride, II, 173.
- $\omega$ -Di-*p*-amidinophenoxyxylene, dihydrochloride, II, 173.
- Di-(*p*-amidinophenylmethyl) ether, and its dihydrochloride, II, 173.
- 4:4'-Diamidinostilbene dihydrochloride, II, 313.
- 4:4'-Diamidinotriphenylmethane, dihydrochloride, II, 173.
- Diamines, condensation of with phthalic anhydride in acetic acid, II, 406.  
metabolism of. See under Metabolism.
- Di(amino-acids), derivatives of, I, 349.
- Diaminocobaltic bisguanidinium sulphate, II, 251.
- Diamond, light absorption and scattering in, I, 314.  
minor elements in, I, 344.  
X-ray diffraction by, I, 46.  
X-ray reflexion by, I, 86, 198.  
spectrum of, I, 314.  
surface energy of, I, 295.  
thermal energy of, I, 226.
- $\beta$ -Di-*n*-amylaminopropionitrile, II, 379.
- $\alpha$ -Di-*n*-amylaminopropiophenone,  $\beta$ -bromo-, hydrobromide, II, 113.
- 4:8-Di-*p*-*tert*-.amylanilino-1:5-di-hydroxyanthraquinone, II, 177.
- Diisoamyl bromoacetate, I, 296.
- NN*-Di-*n*-amylpropylenediamine, dipicrate, II, 379.
- $\alpha$ , $\beta$ -Diamylsulphonylthane, II, 163.
- 4:8-Diamilino-1:5-di-hydroxyanthraquinone, 4:8-di-*o*- and -*p*-chloro-, II, 177.
- 1:3-Dianilindan-2-one, II, 364.
- 2:5-Dianilomethylterephthalic acid, II, 96.
- 4:8-Di-*p*-anisidino-1:5-di-hydroxyanthraquinone, II, 177.
- Di-*p*-anisyl, 2:2'-diiodo-, II, 402.
- 7:8-Dianisylacenaphthene, 7:8-di-hydroxy-, II, 223.
- 7:7-Dianisyl-8-acenaphthenone, II, 223.
- $\beta$ , $\beta$ -Dianisylethylamines,  $\beta$ -hydroxy-, and their derivatives, II, 87.
- 1:3-Dianisylideneindan-2-one, and its perchlorate, II, 364.
- $\alpha$ -Di-*p*-anisyl- $\beta$ -methylpropane, II, 9.
- $\alpha$ -Di-*p*-anisyl- $\beta$ -methylpropan- $\alpha$ -one, II, 9.
- 2:5-Di-*o*'- and -*p*'-anisylthiol-*p*-benzoquinols, II, 24.
- 2:5-Di-*o*'- and -*p*'-anisylthiol-*p*-benzoquinones, II, 24.
- Dianisylvinylxanthylum perchlorate, II, 194.
- Dianisylxanthyleneallene, II, 194.
- Diantlin, nature and action of, III, 126.
- Diapause, among Tenthredinidæ, III, 323.  
in flies, III, 35.
- Diaphragm, flexure of, III, 817.  
hernia of. See under Hernia.
- metabolism of, effect of glucose and insulin on, in rats, III, 332.
- movement of, after abdominal operations, III, 581.
- paralysis of, diphtheritic, treatment of, in box respirator, III, 582.
- unilateral, without brachial plexus involvement, II, 671.
- 4:4'-Diaryldiphenyls, II, 101.
- Diarrhoea, acute, treatment of, in infants, III, 242.  
with sulphathiazole in children, III, 706.
- associated with paracolon bacilli, III, 646.
- diagnosis of, by opsonocytaphag counts, III, 559.
- epidemic, of newborn, III, 144.
- infectious, prevention and treatment of, with lyophile plasma and sulphathiazole in newborn, III, 480.
- neonatal, epidemic, III, 317.
- treatment of, with sulphaguanidine, in children, III, 919.
- Diarylbromomethylenes, reaction of, with potassium amide in liquid ammonia, II, 355.
- Diaryldialkylethylene compounds, symmetrical, synthesis of, II, 393.
- Diastase, malt, activity of, effect of plant nutrients on, III, 936.
- reactions with, III, 489.
- serum. See under Blood-serum.
- urinary. See under Urine.
- Diathermy, short-wave, III, 170.
- Diatoms, green pigment of, III, 950.
- growth of, inhibited by sulphanilamides, effect of *p*-aminobenzoic acid on, III, 491.
- lipins of, III, 175.
- See also *Nitzschia*.
- $\omega$ -Diazo-4-(4'-acetoxyphenoxy)acetophenone, II, 260.
- 21-Diazo-3( $\alpha$ )-acetoxypregnan-20-one, II, 232.
- 5- $\omega$ -Diazoacetyl-6-methyl-2-pyrone, II, 29.
- 3-Diazoacetylpyridine, 2-amino-, II, 113.
- 3-Diazoacetylpyridines, substituted, II, 113.
- Diazo-compounds, aromatic, decomposition of, II, 222.  
spectra of, absorption, I, 225.
- 1-Diazo-1-deoxyketo-d-fructose tetraacetate, II, 395.
- Diazomethane, action of, on acyclic sugar derivatives, II, 395.  
on 2-pyrone derivatives, II, 29.  
syntheses with, II, 350.
- Diazonium borofluorides, II, 336.
- compounds, colour reactions of, with sympathomimetic amines, II, 305.
- Diazonium salts, reaction of, with cuprous halides, II, 52.  
zinc chloride, decomposition of, by alcohols and phenol, II, 401.
- Diazotisation, II, 52, 89.
- 1:2:5:6-Dibenzanthracene, determination of, in rat excreta, III, 822.  
distribution of, after olive oil injection, in rats, III, 822.  
growth inhibition by, in rats, III, 37.  
metabolism of. See under Metabolism.
- 1:2:5:6-Dibenzanthracene, 4':8'-di-hydroxy-, determination of, in rat excreta, III, 822.
- 1:2:8:9-Dibenzanthrone, II, 7.
- 3:4:5:6-Dibenzcarbazole, hepatic changes and tumour induction by, III, 398.
- Dibenzfluorenes, and their derivatives, II, 7.
- Dibenzfluorenes, and their derivatives, II, 7.  
synthesis of, II, 21.
- Dibenzfuran, f.p. of mixtures of diphenylamine with, I, 294.
- 2:3:6:7-Dibenzo-1:5-diazaphenanthrenequinone, II, 331.
- 2:3:6:7-Dibenzo-9:10-dihydro-1:8-diazaphenanthrene, II, 331.
- 2:3:6:7-Dibenzo-9-keto-9:10-dihydro-1:5-diazaphenanthrene, II, 331.
- 2:3:8:9-Dibenzopyrene-4:10-quinone, and its derivatives, II, 262.
- trans*- $\beta$ -Dibenzoylbutane,  $\gamma$ -*p*-bromo-, II, 176.
- $\beta$ -Dibenzoyl- $\Delta^2$ -butylenes,  $\gamma$ -*p*-mono-, and  $\beta$ -*di*-*p*-bromo-, II, 176.
- o*- $\alpha$ -Dibenzoylumene, II, 22.
- 1- $\beta$ -Dibenzoyl- $\alpha$ -diphenyl-*n*-butyl- $\Delta^2$ -cyclopentadiene, II, 20.
- Dibenzthioindigos, II, 333.
- Dibenzyl, 4:4'-diamino-, 4'-acetyl derivative, II, 89.
- Dibenzyl ether, di-*p*-cyano-, II, 174.
- Dibenzylaminomethane, and its derivatives, II, 115.
- 2-Dibenzylaminonaphthalene, II, 306.
- Dibenzylbenzene-1:3-disulphonic acid, di-*p*-nitro-, dipyrindine salt, II, 328.
- 1:5-Dibenzyl-2:3-dimethylrharnofuranoside, II, 302.
- Dibenzylglycine, and its methyl ester, II, 306.
- Dibenzylidenbenzidine, II, 361.
- $\alpha$ , $\delta$ -Dibenzylidenedulcitol,  $\alpha$ , $\delta$ -di-*o*-nitro-, II, 390.
- Dibenzylidenedulcitol, and their derivatives, II, 162.
- $\alpha$ , $\beta$ , $\delta$ -Dibenzylidene-*D*-sorbitol, and its derivatives, II, 390.
- aldehyde-2:3:4:5-Dibenzylidene-*L*-xylose, and its derivatives, II, 390.
- 1:4-Dibenzylloxybenzene, 1:4-di-*p*-cyano-, II, 174.
- 1:5-Dibenzyl-2:3-isopropylidenerharnofuranose, II, 302.
- 1:5-Dibenzylrharnofuranoside, II, 302.
- 2:5-Dibenzylterephthalic acid, 2:5-di-*p*-hydroxy-, II, 96.
- NN*-Dibenzylmethane, II, 306.
- Diborane, spectrum of, infra-red, I, 83.
- Di-*n*-butanesulphonimide, and its sodium salt, II, 297.
- 4:4'-Dibutoxymethoxyazoxybenzene, II, 361.
- Dibutyl mono- and di-bromoacetals, I, 296; II, 214.
- Di-*tert*-.butyl ether, II, 72.  
spectrum of, Raman, I, 7.
- 3:4-Di-*tert*-.butylacenaphthene, and its picrate, II, 429.
- 3:4-Di-*tert*-.butylacenaphthenequinone, and its derivatives, II, 429.
- Di-*tert*-.butylamine, and its picrate, II, 4.
- $\beta$ -Dibutylaminoethyl chloride, II, 224.
- $\alpha$ -Di-*n*-butylaminopropiophenone,  $\beta$ -bromo-, hydrobromide, II, 113.
- $\gamma$ -Dibutylamino-*n*-propyl chloride aurichloride, II, 14.
- 1- $\gamma$ -Dibutylaminopropylcyclohexanol, II, 194.
- 4'-Di-*n*-butylazobenzene, 6-bromo-2,4-dinitro-, 2-chloro-4-nitro-, and 4-mono- and 2,4-di-nitro-, II, 281.
- 2:5-Di-*tert*-.butylbenzenesulphonamide, II, 136.
- N*-Dibutylcarbamylphthalimide, II, 78.

- Diisobutylene, oxidation of, in presence of potassium hydroxide, II, 71.
- Di-*sec*.-butylmalonic acid, diethyl ester, II, 247.
- 4,5-Di-*tert*.-butylnaphthalic acid, derivatives of, II, 429.
- Di-*tert*.-butylquinol, dipole moment of, and its dimethyl ether, I, 289.
- Di-*n*-butylthiocarbamylthiolacetic acid, II, 350.
- 3:4'-Di-*tert*.-butyl-1:7'-thionaphthenacenaphtheneindigo, II, 429.
- d*- $\alpha$ -Dibutylin, II, 130.
- 4:4'-Diisobutyl-6:6'-dimethyldiphenyl, 2:2'-*di*-hydroxy-, and its dimethyl ether, II, 28.
- 3:5-Di(carbamidomethyl)-*p*-cresol, II, 309.
- Di-*p*-carbamylbenzyl ether, II, 174.
- Di-*p*-carbamylphenylsulphone, II, 173.
- Dicarbethoxybis(tricarbomethoxygalloyl)ellagic acid, II, 260.
- aa*-Di-5-carbethoxy-2:4-dimethyl-3-pyrrylethane, II, 380.
- $\alpha\beta$ -Di-5-carbethoxy-2:4-dimethyl-3-pyrrylethane, II, 380.
- aa*-Di-4-carbethoxy-3:5-dimethyl-2-pyrrylpropionic acid, II, 380.
- Dicarbethoxyellagic acid, II, 260.
- 4:4'-Dicarbethoxy-1:3:5:1':3':5'-hexamethyldi-2-pyrrylcarbinol, II, 272.
- methyl ether, II, 272.
- 6-Dicarbethoxymethyl-2:3-dimethylbenzoquinone, 5-bromo-, II, 267.
- 3:5-Dicarbethoxy-4-methylpyrrole-2-carboxylic acid, II, 381.
- $\alpha\beta$ -Di-5-carbethoxy-2-methyl-3-pyrrylethane, II, 380.
- aa*-Di-5-carbethoxy-2-methyl-3-pyrrylpropionic acid, II, 380.
- 3:5-Dicarbethoxy-1:4:3:5'-tetramethyl-4'-ethyldi-pyrrylmethane, II, 330.
- 5:4'-Dicarbethoxy-4:3:5'-trimethylpyrromethene, 3-bromo-, and its hydrobromide, II, 207.
- 2:5-Di- $\beta$ -carbethoxyvinylterephthalic acid, 2:5-di- $\beta$ -cyano-, II, 96.
- aa*-Dicarbobenzyloxyamido- $\beta$ -phenylpropionic acid, II, 76.
- aa*-Dicarbobenzyloxyamidopropionic acid, II, 76.
- Dicarbobenzyloxybenzylidenediamine, II, 76.
- Dicarbobenzyloxyfurfurylidenediamine, II, 76.
- Dicarbobenzyloxy-*p*-methoxybenzylidenediamine, II, 76.
- Dicarbobenzyloxy- $\gamma$ -methylbutylidenediamine, II, 76.
- Dicarbobenzyloxy-3:4-methylenedioxybenzylidenediamine, II, 76.
- Di(carbomethoxy)cryptopyrrylmethene hydrobromide, II, 427.
- 5:4'-Dicarboxy-2-isoamyloxydiphenyl ether, II, 362.
- 4:4'- and 5:5'-Dicarboxy-2:2'-dimethoxydiphenyl ethers, II, 362.
- 5:4'-Dicarboxy-2-methoxydiphenyl ether, II, 362.
- $\gamma$ -2:2-Dicarboxy-6-methoxy-1:2:3:4-tetrahydro-1-naphthylidene-*n*-butyric acid, II, 263.
- 3:3'-Di-*o*-carboxyphenacyl-*p*-pyromellitide, II, 96.
- 5:4'-Dicarboxy-2-propoxydiphenyl ether, II, 362.
- 2:4'- $\gamma$ -Dicarboxypropylbenzophenone, II, 7.
- 2:4'- $\gamma$ -Dicarboxypropyldiphenylmethane, II, 7.
- 3:6-Di-4'-carboxy-2'-quinolyldibenzthiophen, II, 62.
- Dicholesteryl ether, II, 229.
- sym*.-Dicholesteryl pyrophosphate dihydrate, II, 263.
- Dicoumarin. See 3:3'-Methylenebis-(4-hydroxycoumarin).
- Dicranostigma franchetianum*, alkaloids of, II, 275.
- Dictyococcus cinnabarius*, carotenoids in, III, 180, 860.
- Dicyclic compounds, analogy of, with naphthalene, II, 272.
- ww*-Di-*n*-decylacetophenone, II, 345.
- Didecylsulphonylthane, II, 163.
- Didehydro-3:4-diphenyl-5:6-benzo- $\alpha$ -chromone, II, 421.
- Didelphys virginiana*, brain of, regeneration of end arteries of, III, 2.
- dorsal longitudinal fasciculus in, III, 882.
- erythrocytes of, effect of antianemic principles on, III, 435.
- Didelphys virginiana*, interpleural opening in, III, 789.
- ovulation induction in, III, 523.
- Didesyl sulphide, II, 172.
- 4:4'-Di-*N*-diethylaminodiphenyl, dihydrochloride, II, 173.
- $\alpha\delta$ -Di-3:6-dimethoxy-2:4:5-trimethylphenylbutane, II, 235.
- $\alpha\beta$ -Di-3:6-dimethoxy-2:4:5-trimethylphenylethane, II, 235.
- s*-Di-(3:5-dimethylbenzyl)carbamide, *s*-di-4-hydroxy-, II, 309.
- NN'*-Di-(3:5-dimethylbenzyl)ethylenediamine, *NN'*-di-2-hydroxy-, II, 309.
- Di-(2:6-dimethyl-4-*tert*.-butylphenyl)ethane, and dibromo-, II, 85.
- Di-(2:6-dimethyl-4-*tert*.-butylphenyl)methane, II, 85.
- $\alpha\beta$ -Di-2:3-dimethyl-1-naphthylethylene glycols, and their diacetates, II, 171.
- aa*-Di-3:5-dimethylphenyl-*n*-butanes,  $\gamma$ -chloro-*aa*-di-2- and -4-hydroxy-, II, 90.
- aa*-Di-3:5-dimethylphenylethanes, *aa*-di-2- and -4-hydroxy-, II, 89.
- 3:3-Di-3'-2':5'-dimethylpyrroloxindole, II, 64.
- Didinium nasutum*, dipeptidase in, III, 717.
- Didiphenylene-ethylene, effect of, on autooxidation, II, 49, 54.
- $\alpha\zeta$ -Didiphenylene- $\Delta^{ac}$ -hexadiene, II, 137.
- 3:3-Di- $\alpha\beta$ -diphenylhydrazino-*p*-pyromellitide, II, 96.
- cyclo*Didiphenylthioxal, di-3:4-dibromo-, II, 62.
- $\gamma\delta$ -Di-*p*-diphenyl- $\Delta^{ab}$ -hexadiene, II, 223.
- $\gamma\delta$ -Di-*p*-diphenylhexane, II, 223.
- $\gamma\delta$ -Di-4-diphenylhexane,  $\gamma\delta$ -di-4'-hydroxy-, and its dimethyl ether, II, 223.
- $\gamma\delta$ -Di-*p*-diphenyl-*n*-hexane- $\gamma\delta$ -diol, II, 223.
- NN'*-Di-*p*-dipropylaminophenylcarbamide, and its salts, II, 307.
- Di-*n*-dodecyl disulphide, II, 162.
- Didodecylsulphonylthane, II, 163.
- $\alpha\delta$ -Didurylthylenes, and *cis*- and *trans*- $\alpha\beta$ -dihydroxy-, and their acetyl derivatives, II, 90, 91.
- Dielelectrics, breakdown strength and flashover voltage of, effect of X-rays on, I, 8.
- dispersion and absorption in, I, 196.
- electric strength of, I, 227.
- gaseous, breakdown strength of, I, 8.
- glass cloth in compressed gases as, I, 13.
- liquid, corona discharge on, I, 105.
- solid, losses in, I, 8.
- superposition in, I, 84.
- thermal conductivity of, I, 133.
- Dielectric constants, measurement of, apparatus for, I, 250.
- by comparison method, I, 158.
- electrode polarisation in, I, 241.
- of polypeptides, I, 327.
- Diels-Alder reaction, II, 167.
- Diencephalon, lesions in, effect of, on emotional responses, III, 20.
- position of, in embryology, III, 362.
- Diencephalon-pituitary system, disturbances in, III, 597.
- Dienes, addition and dehydrogenation of, in nitrobenzene solution, II, 320.
- condensation of, with unsaturated aryl ketones, II, 261.
- conjugated, constitution and absorption spectra of, II, 161.
- cyclic, spectra of, ultra-violet vacuum, I, 132.
- reactions of, aromatisation in, II, 172.
- syntheses of, II, 299, 406.
- Dieninenes, cyclisation of, II, 171.
- Diet, American, "enriched" flour in, III, 152.
- artificial, rearing of second generation of mice on, III, 699.
- ascorbic acid-free, leg-weakness in hens on, III, 473.
- biotin-deficient, dermatosis due to, in chicks, III, 540.
- brown and white bread, iron exchanges on, III, 906.
- calcium in, for adults, III, 906.
- calcium-deficient, bone fractures due to, III, 537.
- Diet, calcium-deficient, effect of, on calcium and phosphorus metabolism, III, 330.
- calcium- and vitamin-D-deficient, effect of, on bones and teeth of rats, III, 913.
- carbohydrate in, absorption and digestion of, effect of vitamin supplements and whole yeast on, III, 828.
- carbohydrate, fat, and protein in, effect of, on infection resistance, III, 759.
- cereal, sheep's, calcium supplement for, III, 827.
- cereal cellulose, for experimental animals, III, 699.
- chick's, inositol in, III, 42.
- value of whale-meat meal in, III, 468.
- children's, zinc in, III, 828.
- chloride-deficient, and alkalosis in rats, III, 907.
- choline-containing, for dogs, III, 38.
- choline-deficient, study of, in rats, III, 760.
- cooked, nutritional value of, for Calcutta students, and relation to seasonal variations, III, 699.
- cystine addition to, effect of, on chicks, III, 760.
- cystine-deficient, effect of, on growth of mice, III, 699.
- deficient, canine hysteria and, III, 618.
- congenital skeletal abnormalities in offspring of rats on, III, 913.
- diabetic, insulin-stabilised, effect of vitamin-B complex addition on, III, 153.
- effect of, and parathyroid function of pregnant rat, on foetus, III, 404.
- on glucose absorption in rats, III, 257.
- on haemorrhagic degeneration in rats, III, 468.
- on uric acid excretion in children, III, 325.
- on weight gains in pre-school children, III, 826.
- fat, effect of, on dietary fatty livers of rats, III, 624.
- fat-deficient, disturbed carbohydrate metabolism in rats on, III, 542.
- treatment with, and thyroid extract, of acne vulgaris, III, 474.
- fat-free and lactoflavin-deficient, dermatitis and hair loss in, III, 909.
- grass, for man, III, 468.
- growth curve of rat in relation to, III, 759.
- guinea-pig, III, 703.
- health and, in relation to defence, III, 37.
- hen's, effect of diminishing starch in, III, 759.
- effect of peanut meal substitution for protein in, on egg production, hatchability, and viability of chicks, III, 760.
- iron in, effect of, on ovaries, III, 827.
- in cancer, III, 537.
- Indian, improvement of, III, 37.
- infant's, III, 467.
- fortification of, with cereal enriched by iron, calcium, and vitamin-B, III, 537.
- maternal, relation of, to intrauterine sensitisation, III, 784.
- dl*-methionine replaceability in, with its  $\alpha$ -keto-acid analogue, for rats, III, 905.
- of mixed rations, energy utilisation by calves on, III, 905.
- of service personnel in training, determination in, of thiamin, III, 762.
- of Trinidad oilfield labourers, III, 467.
- perosis in relation to, in chicks, III, 472.
- phosphate-deficient, growth and calcification in rats on, III, 764.
- phosphorus-deficient, with and without vitamin-D, blood and tissue changes in puppies on, III, 41.
- phosphorus- and protein-deficient, effect of, on ovulation, oestrus, and reproduction in dairy heifers, III, 468.
- potassium-deficient, cardiac and renal lesions produced in rats by, III, 537.
- prenatal, influence of, on mother and child, III, 826, 904.
- pre-war, in Belgium, III, 826.
- protein and non-protein, S/N ratio and sulphur in urine on, III, 703.

- Diet, protein-rich, effect of, on rats deprived of vitamin-B<sub>1</sub>, III, 328.  
 purified, lactation and reproduction on, III, 892.  
 pyridoxine-deficient, dermatitis due to, in rats, III, 471.  
 rachitogenic, high-calcium-low-phosphorus, antirachitic effect of fat on rats on, III, 764.  
 requirements of, for fertility and lactation, III, 904.  
 restricted, effect of, on egg weight, egg production, and body-weight of fowls, III, 404.  
 selected, thiamin intake in, III, 153.  
 self-selected, calcium balance of young women on, III, 827.  
 self-selection of, III, 537.  
 sodium-deficient, histology of rat tissues on, III, 619.  
 standards of, evolution of, III, 537.  
 sulphur-rich, low-carbohydrate, in arthritis, III, 38.  
 supplements to, effect of, on perosis, III, 906.  
 supplemented with ascorbic acid, iron, protein, and vitamin-B complex, effect of, on haemoglobin formation in man, III, 828.  
 synthetic, inadequacy of, for mice, III, 156.  
 treatment with, of obesity, III, 257.  
 vegetarian and omnivorous, activity of young rats on, III, 326.  
 vitamin-A-deficient, tooth structure changes in rats on, III, 328.  
 vitamin-B-free, effect of glucose in rats on, III, 908.  
 vitamin-B<sub>1</sub>-deficient, pyruvate oxidation by tissues of rats on, III, 761.  
 response to glucose injection in rats on, III, 257.  
 vitamin-E-deficient, embryonic deaths in guinea-pigs on, III, 41.  
 water control in skin by, in albino rats, III, 624.  
 zinc-deficient, tissue histology of rats on, III, 828.  
 Diethanesulphonimide, and its sodium salt, II, 297.  
 3:5-Diethoxy-1:6-dihydrophthalic anhydride, II, 227.  
 Diethoxydimethylallene, and its derivatives, I, 298.  
 $\beta$ : $\beta$ -Diethoxyethyl bromide, II, 78.  
 Di-(2-ethoxy-8-naphthyl)anilide, II, 197.  
 3:3-Diethoxy-*m*-pyromellitimide, II, 96.  
 2:4-Diethoxyquinoline, II, 378.  
 1:5-Diethoxy-3:4:7:8-tetracarboxydicyclo[2, 2]- $\Delta^4$ -octene, dianhydride, II, 227.  
 6:6'-Diethoxythioindigo, II, 333.  
 6:6'-Diethoxythioindirubin, II, 333.  
 Diethyl sulphide,  $\beta$ : $\beta$ -dichloro-, reactions of, II, 344.  
 toxicology of, III, 414.  
 See also Mustard gas.  
 $\alpha$ : $\beta$ : $\beta'$ -tetrachloro-, II, 217.  
 disulphide, spectrum of, Raman, I, 315.  
 Diethylacetic acid, electrolysis of, in mixture with its alkali metal salts, I, 208.  
 Diethylamine,  $\beta$ : $\beta$ -dichloro-, action of sodium on, II, 3.  
*p*-Diethylaminoacetamidobenzenesulphonyldiethylamide, II, 8.  
 3- $\omega$ -Diethylaminoacetamidocarbazole, and its dihydrochloride, II, 63.  
 5- $\omega$ -Diethylaminoacetamidodiquinoline, II, 63.  
 Diethyl- $\delta$ -aminoamylamine, 6-chlorocinchoninamide of, II, 289.  
 $\alpha$ -Diethylamino- $\delta$ -amyl-*m*-aminobenzylamine, II, 288.  
 $\alpha$ -Diethylamino- $\delta$ -amylbenzylamine, II, 288.  
 $\alpha$ -Diethylamino- $\delta$ -amyl-6-chlorolepidylamine, II, 289.  
 $\alpha$ -Diethylamino- $\delta$ -amyl-lepidylamine, II, 288.  
 $\alpha$ -Diethylamino- $\delta$ -amyl-*p*-methoxybenzylamine, II, 288.  
 $\alpha$ -Diethylamino- $\delta$ -amyl-6-methoxylepidylamine, and its tripricate, II, 288.  
*p*-Diethylaminoanillocamphor, magnetic susceptibility of, I, 392.  
 $\beta$ -Diethylaminobenzoyl- $\delta$ -phenyl- $\Delta^4$ -pentadienoic acid,  $\delta$ -amino-, ethyl ester, II, 261.  
 4-Diethylamino-3-benzoyl-6-phenyl-2-pyrone, II, 261.  
 Diethylamino- $\omega$ -chlorohexane, II, 288.  
 $\beta$ -Diethylaminocrotonic acid, ethyl ester, reaction of, with benzoyl chloride, II, 261.  
 $\delta$ -Diethylamino- $\alpha$ -diphenylbutane, II, 193.  
 $\delta$ -Diethylamino- $\alpha$ -diphenyl- $\Delta^4$ -butylene, hydrochloride, II, 193.  
 $\beta$ -Diethylaminoethyl phenylthiourethane, hydrochloride, II, 88.  
 8- $\beta$ -Diethylaminoethylamino-5:6-benzoquinoline, II, 271.  
 8- $\beta$ -Diethylaminoethylamino-2-hydroxy-4-methylquinoline, II, 150.  
 $\beta$ -Diethylaminoethylaminomethylpyridoquinolines, and their salts, II, 206.  
 2-( $\beta$ -Diethylaminoethylamino)-5:6:2':3'-pyridoquinoline, dipicrate, II, 206.  
 Diethylaminoformyldihydrometanocotine, II, 384.  
 $\zeta$ -Diethylaminohexanol, II, 288.  
 $\beta$ -Diethylamino- $\delta$ -hydroxy- $\alpha$ -benzoyl- $\delta$ -phenyl- $\Delta^4$ -pentadienoic acid, ethyl ester, II, 261.  
 4'-Diethylamino-2'-methylazobenzene, 4-amino-4'-di- $\beta$ -hydroxy-, II, 139.  
 4- $\delta$ -Diethylamino- $\alpha$ -methyl-*n*-butylamino-6-methoxy-2-methylquinoline, dihydrochloride, II, 379.  
 $\delta$ -Diethylamino- $\alpha$ -methylbutylaminomethylpyridoquinolines, and their salts, II, 206.  
 2-( $\delta$ -Diethylamino- $\alpha$ -methylbutylamino)-5:6:2':3'-pyridoquinoline dipicrate, II, 206.  
 $\delta$ -Diethylamino- $\alpha$ -3:4-methylenedioxyphenyl- $\Delta^4$ -butylene, hydrochloride, II, 193.  
*p*-Diethylaminophenylcarbamide, dihydrochloride, II, 307.  
*dl*-, *d*-, and *l*-Diethylaminopropan- $\beta$ -ols, and their derivatives, II, 301.  
 Diethylaminopropionamidodiquinolines, II, 63.  
 2- $\beta$ -Diethylaminopropionylthiophen hydrochloride, II, 236.  
 $\alpha$ -Diethylaminopropiophenone,  $\beta$ -bromo-, hydrobromide, II, 113.  
 $\beta$ -Diethylaminopropiophenone hydrochloride, II, 236.  
 $\gamma$ -Diethylaminopropyl *p*-chlorobenzoate, II, 301.  
 phenylthiomethane, hydrochloride, II, 88.  
 8- $\gamma$ -Diethylamino-*n*-propylamino-2-hydroxy-4-methylquinoline, II, 150.  
 2- $\gamma$ -Diethylamino-*n*-propylamino-4-hydroxyquinoline, II, 378.  
 4- $\gamma$ -Diethylamino-*n*-propylamino-6-methoxy-2-methylquinoline, II, 379.  
 6- $\omega$ -Diethylaminoquinoline, and its dihydrochloride, II, 63.  
 9-Diethylaminostyrylxanthylum perchlorate, II, 194.  
 2-Diethylamino-1:2:5:6-tetrahydrobenzaldehyde, II, 406.  
 Diethylammonium decaborate, I, 335.  
 2:4-Diethylaniline, 6-bromo-, II, 141.  
 2:4-Diethylbenzene, 5-bromo-, II, 141.  
*p*-Diethylbenzene, *p*-di- $\beta$ -bromo-, *p*-di- $\beta$ -chloro-, *p*-di- $\beta$ -hydroxy-, derivatives of, and *p*-di- $\beta$ -iodo-, II, 358.  
 dinitro-*p*-di- $\beta$ -hydroxy-, dibenzoyl derivative, II, 359.  
 2:4-Diethylbenzenesulphonamide, II, 136.  
 3:5-Diethylbenzoic acid, synthesis of, and its derivatives, II, 141.  
*N*-Diethylcarbamyolphthalimide, II, 78.  
 1:1'-Diethyl-2:2'-carbocyanine, 6:6'-dinitro-, chloride, II, 240.  
 Diethylene glycol, ethyl ether, external contact with, III, 712.  
 toxicity of, in rats, III, 636.  
 osmate, II, 256.  
 toxicity of, in rats, III, 636.  
 Diethyl- $\omega$ -nitrobenzylideneaminoacetal, II, 335.  
 Diethylisopropylamine, salts, II, 217.  
 $\alpha$ : $\beta$ -Diethylstilbene, 3-*mono*- and 3:3'- and 3:4'-di-hydroxy-, and their derivatives, II, 9.  
 4:4'-dihydroxy-. See Diethylstilbæstrol.  
 $\alpha$ : $\beta$ -Diethylstilbene-3'-carboxylic acid, 4-hydroxy-, II, 18.  
 Diethylstilbæstrol, and its derivatives, toxicology of, III, 890.  
 and its dipropionate, enrichment of cow's milk by, III, 238.  
 Diethylstilbæstrol, determination of, II, 244.  
 effect of, on carbohydrate metabolism, III, 760.  
 on gonadotropic complex secretion in rats, III, 812.  
 on lactation in nulliparous heifers, III, 238.  
 on plasma-phospholipins in birds, III, 812.  
 mammary gland growth with, in guinea-pigs, III, 602.  
 oestrogenic potency of, compared with oestradiol, oestriol, and oestrone in infantile rats, III, 132.  
 progesterone-like activity of, in stimulating mammary lobule-alveolar growth, III, 749.  
 dipropionate, effect of, on mammary development and lactation, III, 387.  
 toxicity of, III, 132.  
 toxicity and clinical use of, III, 311.  
 treatment with, of gonococcal vaginitis in children, III, 891.  
 of hypogonadal symptoms, III, 689.  
 Diethylsulphindichloroacetylamine, II, 129.  
 2:1'-Diethylthia-2'-carbocyanine, 6'-nitro-, iodide, II, 239.  
 2:1'-Diethylthia-4'-carbocyanine, 5-nitro-, iodide, II, 239.  
 2:2'-Diethylthiacarbocyanine, 5:5'-dinitro-, chloride, II, 239.  
 3:1'-Diethylthia-2'-carbocyanine, II, 156.  
 2:1'-Diethylthia-4'-cyanine, 5-nitro-, iodide, II, 239.  
 2:2'-Diethylthiacyanine, 5:5'-dinitro-, chloride, II, 239.  
 2:1'-Diethylthia-4'-dicarbocyanine, 5-nitro-, iodide, II, 239.  
 2:2'-Diethylthiadibenzocyanine, 5:5'-dinitro-, iodide, II, 239.  
 Diethylthiocarbamylthiolacetic acid, II, 350.  
 Diethylthiophens, II, 62.  
 $\delta$ : $\delta$ -Diethylthiosemicarbazide, II, 350.  
 Diisoeugenol methyl ether, II, 358.  
 constitution of, II, 402.  
 $\beta$ -Difenchenes, and their derivatives, II, 325.  
 Diffusing materials, optical properties of, I, 228.  
 Diffusion, factors causing, in micro-organisms, III, 782.  
 in crystal lattices, I, 90.  
 surface, I, 396.  
 thermal, factor for, I, 392.  
 theory of, I, 262.  
 Diffusion apparatus, thermal, chemical reactions in, II, 125.  
 Diffusion coefficients, I, 90.  
 in solution, I, 91.  
 $\alpha$ : $\zeta$ -Difluorenylhexane- $\alpha$ : $\zeta$ -diol, II, 137.  
 Digalloylleic acid, II, 260.  
 Digestion, disorders in, in soldiers, III, 242.  
 effect on, of amylase supplement, III, 528.  
 gastric, in lower vertebrates, III, 241.  
 of connective tissues, III, 528.  
 peptic, inhibition of, III, 894.  
 Digestive tract, autolysis and microbial synthesis in, in herbivora, III, 693.  
 lymph follicle accumulations in, III, 817.  
 radiology of, III, 243.  
 roentgenology in relation to, III, 815.  
 Digitalis, activity of, seasonal, III, 923.  
 determination of, biologically, III, 923.  
 effect of, on heart failure, III, 709.  
 muscular weakness due to, III, 482.  
 portal pressure effects of, III, 630.  
 preparations of, activity of, in frog, cat, and man, III, 164.  
 U.S.P. XI, potency of, III, 709.  
 Digitalis purpurea, flowering of, III, 860.  
 Digitalis, seeds, germination of, III, 785.  
 $\alpha$ : $\beta$ -Diglycerides, optically active, II, 129.  
 Diglycine, hydriodic and hydrobromide, II, 349.  
 4:4'-Di(glyoxal-5-one), II, 117.  
 Digoxin, effect of, on cold-blooded heart, and its relation to digitalis action mechanism, III, 50.  
 Dignanide, compounds of, with bivalent metals, I, 111; II, 254.  
 with metals, II, 251.  
 with trivalent metals, II, 78.  
 mercurichloride, II, 78.  
 Di-1:2:3:4:2':3':4'-hepta-acetyl- $\beta$ -gentiobiosyl-carbonate, II, 302.

- Di-(*cis*- and *trans*-cycloheptane-1,2-diol) osmate, and its potassium salt, II, 256.  
 Di-*n*-heptyl disulphide, II, 162.  
 $\alpha\beta$ -Diheptylsulphonylthane, II, 163.  
 Dihexadecylsulphonylthane, II, 163.  
 Di-(*trans*-cyclohexane-1,2-diol) osmate, and its potassium salt, II, 256.  
 Di-*n*-hexanesulphonimide, and its sodium salt, II, 297.  
 $\Delta^{1,2}$ -Dicyclohexenyl, II, 252.  
 Dicyclohexyl, *undecafluoro*-, II, 84.  
 Di(cyclohexylamido)phosphoric acid, phenyl ester, II, 281.  
 $\alpha\kappa$ -Dicyclohexyldecane, II, 399.  
 $\beta\beta$ -Dicyclohexylthylamine,  $\beta$ -hydroxy-, and its derivatives, II, 87.  
 5,5-Di- $\beta$ -cyclohexylethylbarbituric acid, II, 151.  
 Dicyclohexylglycollic acid,  $\beta$ -piperidinoothylester, salts, II, 237.  
 $\alpha\delta$ -Dicyclohexylidenebutane, II, 353.  
 Dicyclohexylidene-2,2'-sulphone, II, 135.  
 Di-(5-cyclohexyl-3-methylbenzyl) ether, *di*-2-hydroxy-, II, 310.  
 $\alpha\beta$ -Di-(3-cyclohexyl-5-methylphenyl)ethane, *di*-2-hydroxy-, and its diacetate, II, 310.  
 Di-(3-cyclohexyl-5-methylphenyl)methane, *di*-2-hydroxy-, and its diacetate, II, 310.  
 Di-(5-cyclohexyl-3-methylphenyl)methane, *di*-2-hydroxy-, and its diacetate, II, 310.  
 Di-(3-cyclohexyl-5-methyl-*o*-quinonemethide, *di*-2-hydroxy-, II, 310.  
 $\alpha\gamma$ -Dicyclohexylpropane,  $\alpha\gamma$ -*di*-1-hydroxy-, II, 309.  
 $\alpha\gamma$ -Dicyclohexyl- $\Delta^4$ -propinene,  $\alpha\gamma$ -*di*-1-hydroxy-, and its derivatives, II, 309.  
 $\alpha\beta$ -Diheptylsulphonylthane, II, 163.  
 $\alpha\alpha$ -Dicyclohexyltetradecane, II, 222.  
 Diisohydroocarpyl sulphide, II, 390.  
 Dihydroabietic acids, II, 106.  
 Dihydroabietic acids,  $\delta$ -hydroxy-, and their derivatives, II, 106.  
 Dihydroanhydro-*g*-strophanthidin, II, 396.  
 Dihydroatisine, and its hydrochloride, II, 335.  
 2,3-Dihydrobenzaldehyde, semicarbazone, II, 406.  
 1,2-Dihydrobenzofuran-2-one, 3,5-*di*hydroxy-, *di*-benzyl derivative, II, 234.  
 1,2'-Dihydro-3,4-benzopyrene, and its picrate, II, 86.  
 Dihydrobetulanic acid, and its methyl ester, II, 148.  
 Dihydro- $\psi$ -brucine, condensation of, with acetic anhydride, hydrocyanic acid, and malonic acid, II, 290.  
 Dihydrobrucine-9-acetic acid, and its derivatives, II, 291.  
 Dihydrobrucine-9-nitrile, and its salts, II, 291.  
*dl*-Dihydrocamphorenic acid. See 1:2,2-Tri-methylcyclohexane-1-carboxylic acid.  
 Dihydrocaryophyllenal, derivatives, II, 370.  
 Dihydrocaryophyllenone, derivatives, II, 370.  
 $N^4$ -Dihydrochaulinooogrylsulphanilamide, II, 222.  
 Dihydrochlorocoldes, and their derivatives, II, 158.  
 Dihydrocivetone, derivatives of, II, 178.  
 Dihydroodeines, and their derivatives, II, 158.  
 3,4-Dihydrocoumarin-4-acetic acid, 7-hydroxy-, and its amide, II, 420.  
 Dihydrocoumarin-4-cyanoacetic acid, 3-cyano-, amide and ethyl ester, II, 420.  
 Dihydrocumingidine, and its derivatives, II, 210.  
 Dihydrodeoxystrychnine, and bromo-, II, 39.  
 Dihydrodeoxyvomine, and bromo-, and their derivatives, II, 39.  
 3,4-Dihydro-4,4'-dicoumarinyl, II, 420.  
 2,5-Dihydro-1,2-dimethylindole, II, 116.  
 7,12-Dihydro-6,13-diphenylpentacene, and its di-oxide, II, 321.  
 Dihydro- $\alpha$ -elemanic acid, II, 419.  
 Dihydro- $\beta$ -elemanic acid, and its methyl ester, II, 419.  
 Dihydro- $\alpha$ -elemolic acid, methyl ester, II, 418.  
 Dihydro- $\beta$ -elemolic acid, and its acetate, II, 267.  
 Dihydro- $\beta$ -elemonic acid, and its oxime, II, 267.  
 Dihydro- $\alpha$ - and  $\beta$ -elemonic acids, and their derivatives, II, 419.  
 Dihydroeorgosterol, and its acetate, II, 232.  
 2,5-Dihydro-3-ethylindole, II, 116.  
 Dihydroevodionol, II, 61.  
 Dihydrofarnesene, and its trihydrochloride, II, 161.  
 4,5-Dihydroglyoxalines, action on, of aromatic acid chlorides, II, 116.  
 Dihydroguaiol, degradation of, by chromic acid, II, 286.  
 2,3-Dihydroindole-2-carboxylic acid, *di*- and *tri*-chloro-3-hydroxy-, methyl esters, II, 269.  
 Dihydro- $\alpha$ -lactucol, II, 43.  
 Dihydrometanocotine, and its derivatives, II, 384.  
 Dihydromethylevodionol, II, 61.  
 Dihydromorphines, and their derivatives, II, 168.  
 Dihydromyrcene, *mono*- and *di*-hydroxy-, II, 161.  
 Dihydronapellene, and its derivatives, II, 336.  
 Dihydronaphthalene epoxides, reaction of, with magnesium bromide, II, 409.  
 Dihydronerolidol, II, 161.  
 Dihydronorsiaresinol, II, 418.  
 Dihydro-oleanylenes, II, 372.  
 Dihydro-oreoselonol acid, II, 420.  
 m.p. of, II, 269.  
 9,10-Dihydrophenanthrene-9,10-diol, osmate, II, 256.  
*cis*-9,10-Dihydrophenanthrene-9,10-diol, and its diacetate, II, 256.  
 10,11-Dihydrophenanthro(1, 2-*b*)furan-1-carboxylic acid, 2-hydroxy-, ethyl ester, II, 318.  
 3,4-Dihydroquinazol-4-one, and its picrate, II, 205.  
 Dihydroquinoline, II, 331.  
 Dihydro- $\psi$ -sapogenins, structure of, II, 414.  
 Dihydrosarsapogenin, 23-hydroxy-, II, 265.  
 Dihydrosolasodine, and its hydrobromide, II, 157.  
 Dihydrosqualene, *di*hydroxy-, II, 161.  
 5,6-Dihydrostigmastrol, and its derivatives, II, 25.  
 Dihydro-*g*-strophanthidin, II, 396.  
 Dihydro- $\psi$ -strychnine, condensation of, with acetic anhydride, hydrocyanic acid, and malonic acid, II, 290.  
 Dihydrostrychnine-9-acetic acid, and its derivatives, II, 290.  
 Dihydrostrychnine-9-nitrile, and its derivatives, II, 290.  
 Dihydrotachysterol, bioassay of, III, 808.  
 treatment with, of hypoparathyroidism, III, 381.  
 of parathyroid insufficiency, III, 521.  
 of tetany, III, 521.  
 See also A.T. 10.  
 Dihydroterphenyl, and its dichloride, II, 354.  
 Dihydrothionaphthenemethylsulphonium platinichloride, II, 11.  
*C-n*- and *iso*-Dihydrotoxiniferin I, and their salts, II, 157.  
 Dihydro- $\beta$ -trilemol, and its derivatives, II, 287.  
 Dihydro- $\beta$ -trilemolone, II, 267.  
*n*- and *iso*-Dihydrovomines, II, 39.  
 Di-( $\beta$ -4-imino-3-barbiturylethyl) disulphide, II, 37.  
 Di-1-indanyl ether, II, 256.  
 Diketan, dipole moments and structures of, I, 289.  
 1,4-Diketo-9-acetoxy-3-methyl-5(or 8)-vinyl-5:8:9:10-tetrahydronaphthalene, II, 320.  
 1,4-Diketo-9-acetoxy-3:6:7-trimethyl-5:8:9:10-tetrahydronaphthalene, II, 320.  
 3:11-Diketostætallocholic acid, 17( $\beta$ )-hydroxy-, methyl ester, II, 414.  
 3,5-Diketo-6-benzyl-1:2,4-triazine, 2,4-dichloro-, II, 217.  
 $\epsilon\delta$ -Diketodecoic acid, methyl ester, II, 300.  
 1,3-Diketo-2,4-diacyetyl-5-methyl-1:2:3:4-tetrahydrobenzene, and its *p*-nitrophenylhydrazones, II, 409.  
 2,4-Diketo-5,5-di-*n*-amylloxazolidine, II, 35.  
 3,5-Diketodibenzyl-1:2,4-triazine, 2-chloro-, II, 217.  
 2,4-Diketo-5,5-dibutylloxazolidines, II, 35.  
 2,2'-Diketo- $\alpha\beta$ -dicyclohexylethane-1,1'-dicarboxylic acid, and its diethyl ester, II, 54.  
 4,5-Diketo-4,5-dihydrophenanthro-9'10':2,3-thiophen, II, 180.  
 1,3-Diketo-2,2-dimethylhydrindene, reaction of, with Grignard reagents, II, 146.  
 $\alpha\epsilon$ -Diketo- $\beta\gamma$ -diphenyl- $\alpha\epsilon$ -*di*-*p*-anisylpentane, II, 316.  
 $\alpha\epsilon$ -Diketo- $\beta\epsilon$ -diphenyl- $\alpha\gamma$ -*di*-*p*-anisylpentane, and its oxime, II, 316.  
 $\alpha\epsilon$ -Diketo- $\beta\delta$ -diphenyl- $\alpha\epsilon$ -*di*-*p*-hydroxyphenylpentane, and its diacetate, II, 316.  
 $\alpha\epsilon$ -Diketo- $\beta\gamma$ -diphenyl- $\alpha$ -*p*-tolyl- $\epsilon$ -*p*-anisylpentane, II, 316.  
 2,4-Diketo-5,5-dipropylloxazolidines, II, 35.  
 $\lambda\mu$ -Diketo- $\Delta\beta\delta$ -docosadine, II, 393.  
 $\eta\kappa$ -Diketodecoic acid, methyl ester, II, 300.  
 2,5-Diketo-7-ethoxydicyclo(4, 2, 0)- $\Delta^{3,6}$ -octadiene, II, 227.  
 1,4-Diketocyclohexane bis-2,4-dinitrophenylhydrazones, II, 331.  
 Diketohydrindene, anils of, autoxidation products of, II, 379.  
 1,3-Diketohydrindene, 2-nitro-, identification of organic bases with, II, 248.  
 Diketohydrindene series, autoxidation of anils in, II, 329.  
 3,4-Diketo-6-methoxy-1-phenyl-2-*p*-dimethylaminophenyl-1:2:3:4-tetrahydroisoquinoline, II, 329.  
 2,4-Diketo-5-methyl-5-*n*-amylloxazolidine, II, 35.  
 2,4-Diketo-5-methyl-5-butyloxazolidines, II, 35.  
 2,4-Diketo-5-methyl-5- $\beta\beta$ -dimethyl-*n*-propylloxazolidine, II, 35.  
 2,4-Diketo-5-methyl-5-*n*-heptyloxazolidine, II, 35.  
 2,4-Diketo-5-methyl-5-*n*-hexyloxazolidine, II, 35.  
 2,4-Diketo-5-methyl-5- $\gamma$ -methyl-*n*-hexyloxazolidine, II, 35.  
 2,4-Diketo-5-methyl-5-*n*-nonyloxazolidine, II, 35.  
 2,4-Diketo-5-methyl-5-*n*-octyloxazolidine, II, 35.  
 Diketones, cyclic, anils, II, 364.  
 reactions and enolisation of, II, 22, 23.  
 $\beta$ -Diketones, cyclic, reaction of, with Grignard reagents, II, 146.  
 $\gamma$ -Diketones, II, 300, 363.  
 1,4-Diketones, detection of, II, 244.  
 unsaturated, action of hydrogen bromide in acetic acid on, II, 176.  
 $\gamma\zeta$ -Diketo-octoic acid, II, 300.  
 $\alpha\epsilon$ -Diketo- $\gamma$ -phenyl- $\alpha\epsilon$ -*di*-2-bromo-5-nitrophenylpentane, II, 16.  
 3,4-Diketo-1-phenyl-2-*p*-dimethylaminophenyl-6-methyl-1:2:3:4-tetrahydroisoquinoline, II, 329.  
 $\alpha\epsilon$ -Diketo- $\gamma$ -phenyl- $\alpha\epsilon$ -*di*-*p*-tolylpentane, *dioxime*, II, 316.  
 3,5-Diketo-6-phenylethyl-1:2,4-triazine, 2,4-dichloro-, II, 217.  
 1,3-Diketo-4-phenyl-2-methyl-1:2:3:4-tetrahydroisoquinoline, 4-hydroxy-, II, 379.  
 1,3-Diketo-4-phenyl-1:2:3:4-tetrahydroisoquinoline, 4-hydroxy-, II, 379.  
 Diketopiperazine, compounds of, with amino acids, II, 32.  
 Diketopiperazines, separation of, from amino acids by ionophoresis, II, 329.  
 3,6-Diketo-sterols, II, 231.  
 2,4-Diketo-1:2:3:4-tetrahydro-1,3-diaza-acridine, II, 331.  
 Di- $\gamma$ -keto- $\gamma$ -2-thienyl-*n*-propylmethylamine, and its hydrochloride, II, 236.  
 $\alpha\epsilon$ -Diketo- $\beta\gamma\epsilon$ -triphenyl- $\alpha$ -*p*-anisylpentane, and its oxime, II, 316.  
 $\alpha\epsilon$ -Diketo- $\alpha\beta\gamma$ -triphenyl- $\epsilon$ -*p*-benzylideneamino-phenylpentane, II, 315.  
 $\alpha\epsilon$ -Diketo- $\alpha\beta\gamma$ -triphenyl- $\epsilon$ -*p*-bromophenylpentane, and its derivatives, II, 315.  
 $\alpha\epsilon$ -Diketo- $\beta\gamma\epsilon$ -triphenyl- $\alpha$ -*p*-hydroxyphenylpentane, and its acetate, II, 316.  
 $\alpha\epsilon$ -Diketo- $\beta\gamma\epsilon$ -triphenyl- $\alpha$ -*p*-tolylpentane, and its oxime, II, 316.  
 $\alpha\gamma$ -Diketo-*n*-valeric acid, preparation and reactions of, II, 298.  
 Dilantin, effect of, on experimental epilepsy, III, 672.  
 Dilantin sodium, gum hyperplasia from, III, 925.  
 treatment with, of epilepsy, III, 550.  
 Dilatometers, I, 214.  
 combined with magnet, I, 412.  
 Dilator iridis. See under Muscle.  
 Dilaudit, detection of, II, 68.  
 1,4-Di-2'-lepidylpiperazine, and its dinitrate, II, 36.

- 1:4-Di-2'-lepidylpiperazine, *di*-5'-nitro-, II, 37.  
 $\alpha$ -Dimesityl- $\Delta^{\gamma}$ -butadiene, *ad*-dihydroxy-, diacetyl derivative, II, 144.  
 $\alpha$ -Dimesitylbutane- $\alpha$ -dione, di-enolate, acylation of, II, 144.  
 $\alpha$ -Dimesitylbutane- $\alpha$ -dione,  $\beta$ -mono- and  $\beta$ -*di*-hydroxy-, benzoyl derivatives, II, 316.  
 $\alpha$ -Dimesitylbutane- $\alpha$ - $\beta$ -trione, enol, acylation of, and its bromo-derivatives, II, 316.  
 enol methyl ethers, reduction of, II, 316, 408.  
 $\alpha$ -Dimesitylbutane- $\alpha$ - $\beta$ -trione,  $\gamma$ -mono- and  $\gamma$ -*di*-bromo-, II, 316.  
 $\alpha$ -Dimesityl- $\beta$ -*tert*-butylbutane- $\alpha$ -dione, and  $\gamma$ -bromo-, II, 145.  
 dienols and enols of, stereochemistry of, II, 145.  
 $\alpha$ -Dimesityl- $\beta$ -*tert*-butyl- $\Delta$ -butylene- $\alpha$ -dione, II, 145.  
 2:5-Dimesityl-3-*tert*-butylfuran, and 4-bromo-, II, 145.  
 $\alpha$ -Dimesitylethylene, II, 171.  
 $\alpha$ -Dimesityl- $\Delta^{\gamma}$ -propen- $\alpha$ -ol, II, 92.  
 Dimethanesulphonamide, and its salts, II, 5, 297.  
 Dimethanesulphonamidoacetyl chloride, II, 5.  
 Dimethanesulphonyldiglycylglycine, II, 5.  
 Dimethanesulphonylgllycylglycine, II, 5.  
 Dimethanesulphonyltriglycylglycine, II, 5.  
 4:5-Dimethoxy-2-acetyltoluene, 3-hydroxy-, II, 23.  
 6:7-Dimethoxy-1-*o*-aminophenyl-1:2:3:4-tetrahydroisoquinoline, and its derivatives, II, 115.  
 6:7-Dimethoxy-1-*p*-aminophenyl-1:2:3:4-tetrahydroisoquinoline, II, 375.  
 4:4'-Dimethoxy-1:1'-azonaphthalene, II, 140.  
 2:2'-Dimethoxyazoxybenzene-5:5'-diacetic acid, II, 284.  
 4:5-Dimethoxybenzaldehyde-6-arsinic acid, II, 291.  
 2:5-Dimethoxybenzoic acid, 4-bromo-, and its methyl ester, II, 196.  
 2:6-Dimethoxybenzoquinone, alkenyl and alkyl derivatives, synthesis and anti-bacterial properties of, II, 410.  
 3:4-Dimethoxy-1:4-benzoquinone, 2-hydroxy-, and its 2-acetyl derivative, II, 10.  
 $\beta$ -2:4-Dimethoxybenzoylpropionic acid,  $\beta$ -5-bromo-, II, 198.  
 2:4-Dimethoxy- $\beta$ -benzylcinnamic acid, II, 326.  
 2:3-Dimethoxybenzylidenepyruvic acid, methyl ester, II, 54.  
 2:2'-Dimethoxy-5:5'-bischloroacetyldiphenyl ether, II, 362.  
 6:7-Dimethoxy-1- $\beta$ -bromoethyl-3:4-dihydroisoquinoline, and its picrate, II, 115.  
 2:6-Dimethoxy-3-*isobutyl*benzoquinone, II, 410.  
 4:5-Dimethoxy-2-carboxyphenylarsinic acid, II, 291.  
 3:4-Dimethoxy- $\gamma$ -chloroallylbenzene, II, 357.  
 3:4-Dimethoxycinnamic acid, 5-bromo-6-nitro-, II, 405.  
 5:7-Dimethoxycoumarin-3-carboxylic acid, 6-hydroxy-, and its ethyl ester, II, 420.  
 3:3'-Dimethoxydeoxybenzoin, 2:4-dinitrophenylhydrazones, II, 9.  
 2:3'-Dimethoxy-2:3:5:6-dibenzo-7-keto-7:8-dihydro-1:8-naphthyridine, and its picrate, II, 331.  
 6:7-Dimethoxy-2:4-diketo-1:2:3:4-tetrahydro-1:3-diaza-acridine, II, 331.  
 6:7-Dimethoxy-1-3':4'-dimethoxyphenyl-2:3-dimethylnaphthalene, 4-hydroxy-, and their derivatives, II, 403.  
 6:7-Dimethoxy-1-3':4'-dimethoxyphenyl-2:3-dimethyl-1:2:3:4-tetrahydronaphthalene, II, 402.  
 2:6-Dimethoxy-3:5-dimethylbenzoquinone, II, 410.  
 2:5-Dimethoxy-3:4-dimethylbenzyl chloride and cyanide, II, 268.  
 2:5-Dimethoxy-2:5-dimethyl-1:4-dioxan, II, 327.  
 2:2-Dimethoxy-3:3-dimethylindan-1-one, II, 22.  
 2:5-Dimethoxy-3:4-dimethylphenylacetic acid, and 6-bromo-, II, 268.  
 Dimethoxydiphenyl sulphides, II, 403.  
 2:7-Dimethoxydiphenylene, and its picrate, II, 402.  
 3:3'-Dimethoxy-4:4'-diphenylenephthalamic acid, and its sodium salt, II, 361.  
 4:4'-Dimethoxydiphenylmethane, 3:3'-dichloro-, II, 284.  
 Dimethoxydiphenylsulphones, II, 403.  
*NN'*-2:2'-Dimethoxydiphenylthiocarbamide, 5:5'-dichloro-, II, 290.  
 $\gamma$ -Di-(4'-methoxy-4-diphenyl)- $\Delta$ -hexadiene, II, 223.  
 $\gamma$ -Di-(4'-methoxy-4-diphenyl)-*n*-hexane- $\gamma$ -diol, II, 223.  
 4:4'-Di- $\beta$ -methoxyethoxyazobenzene, II, 361.  
 2:6-Dimethoxy-3-ethylbenzoquinone, II, 410.  
 3'-4'-Dimethoxyflavanone, II, 268.  
*cis*-3:3'-Dimethoxy-2:4:6:2':4':6'-hexamethylstilbene- $\alpha$ - $\beta$ -diol, II, 91.  
 4:4'-Dimethoxy-2-cyclohexylidenecyclohexanone, and its 2:4-dinitrophenylhydrazones, II, 171.  
 2:2'-and 4:4'-Dimethoxymethoxyazobenzenes, II, 281.  
 4:4'-Dimethoxymethoxyazobenzene, II, 361.  
 2:6-Dimethoxy-4-methyl- $\beta$ -benzylcinnamic acid, II, 326.  
 Dimethoxy-4-methylcoumarin-3-acetic acid, and their ethyl esters, II, 420.  
 Dimethoxymethylenedioxystilbenes,  $\alpha$ -cyano-, II, 257.  
 6:7-Dimethoxy-3-methylnaphthalene-1:2-dicarboxylic acid, anhydride of, II, 53.  
 2:6-Dimethoxy-4-methyl- $\beta$ -propylcinnamic acid, II, 375.  
 3:3-Di-(4'-methoxy-2'-methyl-5'-isopropylphenyl)-oxindole, II, 180.  
 3:7-Di- $\beta$ -methoxy-2'-methyl-4'-quinolylthionine, II, 379.  
 3:4-Dimethoxy-4'-methylstilbene,  $\alpha$ -cyano-, II, 257.  
 5:6-Dimethoxy-3-methyl-1:2:3:4-tetrahydronaphthalene-1:2-dicarboxylic acid, anhydride of, II, 54.  
 6:7-Dimethoxy-3-methyl-1:2:3:4-tetrahydronaphthalene-1:2-dicarboxylic acid, derivatives of, II, 53.  
 1:5-Dimethoxynaphthalene, bromination of, II, 255.  
 1:5-Dimethoxynaphthalene, dibromo-derivatives, II, 255.  
 1:4-Dimethoxynaphthalene-2:3-dicarboxylic acid, and its anhydride and diethyl ester, II, 259.  
 1:4-Dimethoxy-2-naphthoic acid, methyl ester, II, 259.  
 $\gamma$ -Di- $\beta$ -methoxy-2-naphthyl-*n*-hexane- $\gamma$ -diol, II, 223.  
 6:7-Dimethoxy-1-*o*-nitrophenyl-3:4-dihydroisoquinoline, II, 115.  
 6:7-Dimethoxy-1-*p*-nitrophenyl-3:4-dihydroisoquinoline, II, 375.  
 $\gamma$ -Di-(4'-methoxy-4-phenoxyphenyl)-*n*-hexane- $\gamma$ -diol, II, 223.  
 Dimethoxyphenyl  $\beta$ -9-anthranylvinyl ketones, II, 284.  
 $\gamma$ -2:5-Dimethoxyphenylbutyrolactone, II, 257.  
 5:7-Dimethoxy-3-phenylcoumarin, II, 420.  
 3:4-Dimethoxyphenyl- $\gamma$ -diethylaminopropylcarbinol, and its hydrochloride, II, 193.  
 $N'$ - $\beta$ -3:4-Dimethoxyphenylethylsulphanilamide, II, 51.  
 4:3':4'-Dimethoxyphenylhydantoin, II, 271.  
 5:2':3'-Dimethoxyphenyl-3:6-methylene- $\Delta^1$ -cyclohexene-4-oxalic acid, methyl ester, II, 54.  
 $\alpha$ -3:4-Dimethoxyphenylpropane,  $\alpha$ -hydroxy-, and its benzoate, II, 357.  
 2:6-Dimethoxy-3-propenylbenzoquinone, II, 410.  
 $\alpha$ - $\beta$ -Dimethoxypropionic acid, derivatives of, II, 347.  
 2:6-Dimethoxy-3-propylbenzoquinone, II, 410.  
 2:4-Dimethoxy- $\beta$ -propylcinnamic acid, II, 375.  
 3:3'-Dimethoxy-*m*-pyromellitimide, II, 96.  
 7:8-Dimethoxyquinoline, and its 10-acetyl derivative, II, 331.  
 3:6-Dimethoxyquinol, 2-hydroxy-, and its 2-acetyl derivative, II, 10.  
 3:4-Dimethoxystilbene, 4'-chloro- and 3'-nitro- $\alpha$ -cyano-, II, 257.  
 Dimethoxystilbenes,  $\alpha$ -cyano-, II, 257.  
 6:7-Dimethoxy-1-*p*-sulphanilamidophenyl-1:2:3:4-tetrahydroisoquinoline, II, 375.  
 2:5-Dimethoxy-2:3:5:6-tetramethyl-1:4-dioxan, II, 327.  
 4:5-Dimethoxytoluene, 2:3-dihydroxy-, and its diacetyl derivative, II, 23.  
 4:6-Dimethoxytoluquinone, preparation of, II, 409.  
 $\beta$ -Di-6-methoxy-*m*-tolylbutyric acid, II, 282.  
 6:7-Dimethoxy-1-3':4':5'-trimethoxybenzyl-3:4-dihydroisoquinoline, and its derivatives, II, 385.  
 6:7-Dimethoxy-1-3':4':5'-trimethoxybenzylisoquinoline, and its picrate, II, 385.  
 $\beta$ -3:6-Dimethoxy-2:4:5-trimethylphenylethyl bromide and chloride, II, 235.  
 Dimethyl ether. See Methyl ether.  
 sulphate, polymerisation effect of, II, 304.  
 reaction of, with diphenylmethylamine and triphenylamine, II, 307.  
 with ethers, II, 309.  
 sulphide, heat capacity, heats of fusion and vaporisation, vapour pressure, and entropy of, I, 138.  
 $\alpha$ -Dimethylacetoacetic acid, ethyl ester, semicarbazone, II, 130.  
 Dimethyl- $\beta$ -acetoxethylsulphonium chloride and reneckate, II, 391.  
 Dimethylacetylene, heat capacity, entropy, and heats of transition, fusion, and vaporisation of, I, 138.  
 Dimethylacrosulphonamide, reaction of, with hemoglobin, III, 917.  
 $\beta$ -Dimethylacrylamidopropionic acid, and its ethyl ester, II, 278.  
 $\beta\beta$ -Dimethylacrylic acid, hydration of, I, 371.  
 $\alpha$ -Dimethylallyl alcohol, esters, II, 391.  
 $\gamma$ -Dimethylallylcyclohexane, II, 185.  
 4:4'-Dimethylaminodiphenyl, dihydrochloride, II, 173.  
 Di(methylamido)phosphoric acid, phenyl ester, II, 281.  
 Dimethylamine, distribution of trimethylamine and, between chloroform and water, I, 19.  
 $p$ -Dimethylaminoanilinomethylenecamphors, II, 325.  
 $p$ -Dimethylaminoanilcamphor, magnetic susceptibility of, I, 392.  
 3- $p$ -Dimethylaminoaniloflavanone, II, 364.  
 $p$ -Dimethylaminoazobenzene, fission products of, inhibition of diphenylpyridine nucleotide by, III, 536.  
 See also Butter-yellow.  
 4-Dimethylaminoazobenzene, chloro-derivatives, II, 192.  
 $p$ - $p$ -Dimethylaminobenzeneazo-2''-hydroxy-5''-methylbenzeneazobenzene, II, 89.  
 4- $p$ -Dimethylaminobenzeneazo-4'-2''-hydroxy-5''-methylbenzeneazodibenzyl, II, 89.  
 4- $p$ -Dimethylaminobenzeneazo-4'-2''-hydroxy-5''-methylbenzeneazodiphenyl, II, 89.  
 4- $p$ -Dimethylaminobenzeneazo-4'-2''-hydroxy-5''-methylbenzeneazodiphenylmethane, II, 89.  
 4- $p$ -Dimethylaminobenzeneazo-4'-2''-hydroxy-5''-methylbenzeneazostilbene, II, 89.  
 3- $p$ -Dimethylaminobenzylidene-2-methylindolenine methopchlorate, II, 156.  
 $p$ -Dimethylaminobenzylidenemethanone, I, 226.  
 2- $\delta$ - $p$ -Dimethylamino- $\Delta^{\gamma}$ -butadienylquinoline, and its methiodide, II, 156.  
 1- $\delta$ -Dimethylamino- $\Delta^{\gamma}$ -butadienylthiazole ethiodide, II, 155.  
 3- $\delta$ -Dimethylaminobutylpyridine methobromide, II, 385.  
 $\gamma$ -Dimethylamino-*n*-butyric acid, and its ethyl ester, hydrochlorides, II, 3.  
 $p$ -Dimethylaminocinnamylidenemalononitrile, I, 225.  
 $p$ -Dimethylaminocinnamylidenephthalacetone nitrile, I, 226.  
 4'-Dimethylaminodibenzyl, 4-amino-, and its acetyl derivative, II, 89.  
 4'-Dimethylamino-3:4-dimethoxystilbene,  $\alpha$ -cyano-, II, 257.  
 $\gamma$ -Dimethylamino- $\beta$ - $\beta$ -dimethyl-*n*-propyl alcohol, esters, II, 237.  
 4'-Dimethylaminodiphenyl, 4-amino-, and its acetyl derivative, II, 89.  
 4'-Dimethylaminodiphenylmethane, 4-amino-, and its acetyl derivative, II, 89.  
 4'-Dimethylamino-4-methoxystilbene,  $\alpha$ -cyano-, II, 257.  
 2- and 6-Dimethylaminomethyl-1-decahydronaphthylidene-ethylcyclohexanols, 3-hydroxy-, and their acetyl derivatives, II, 359.



- 6-Dimethylaminomethyl-1-decahydronaphthylidene-ethyl- $\Delta^1$ -cyclohexenes, 3-hydroxy-, II, 359.
- 4'-Dimethylamino-3:4-methylenedioxy stilbene, *a*-cyano-, II, 257.
- 2-Dimethylamino-3-methyl-1-ethyl-6-isopropyl- $\Delta^2$ -cyclohexenol, and its derivatives, II, 408.
- 6-Dimethylaminomethylcyclohexylidene- $\beta$ -1-decahydronaphthylidene-ethanes, 3-hydroxy-, II, 359.
- 2-Dimethylamino-3-methyl-6-isopropylcyclohexanol, and its picrate, II, 408.
- 2-Dimethylamino-3-methyl-6-isopropyl- $\Delta^2$ -cyclohexenol, II, 408.
- 2-Dimethylamino-3-methyl-6-isopropyl- $\Delta^2$ - and - $\Delta^3$ -cyclohexenones, II, 408.
- m*-Dimethylaminophenolsuccin, and its hydrochloride, II, 119.
- p*-Dimethylaminophenyl thiourethane, hydrochloride, II, 88.
- p*-Dimethylaminophenylcarbamide, salts, and *di*-nitro-, II, 307.
- 4-*p*-Dimethylaminophenylhydantoin, II, 271.
- $\alpha$ -Dimethylaminopropiophenone,  $\beta$ -bromo-, hydrobromide, II, 113.
- 4'-Dimethylaminostilbene, 4-amino-, and its acetyl derivative, II, 89.
- 2-*p*-Dimethylaminostyrylbenzthiazole, II, 156.
- 1-*p*-Dimethylaminostyrylbenzthiazolium ethochloride, 5-nitro-, II, 239.
- 2-*p*-Dimethylaminostyrylcyclohexenothiazole, II, 274.
- 2-*p*-Dimethylaminostyrylpyridine alkiodides, II, 329.
- 2-*p*-Dimethylaminostyrylquinoline, and its salts, spectra of, absorption, II, 153.
- halochromism of, I, 247.
- 9-Dimethylaminostyrylxanthylum perchlorate, II, 194.
- Dimethylammonium decaborate, I, 335.
- Dimethylisoamylphloroglucinol, II, 260.
- $\Delta^2$ -6:17-Dimethylandrostene-6:17-diol, II, 365.
- Dimethylaniline, molecular surface energy of addition compounds of sulphur dioxide and, I, 134.
- reaction of, with nitric acid, II, 400.
- Dimethylaniline, *p*-amino-, effect of, on growth of rats, orally administered, III, 827.
- 3-bromo-, 3-bromonitro-, 3-chloro-, 3-chloronitro-, 3-fluoro-, 3-fluoronitro-, 3-fluoronitroso-, 3-iodo-, 3-iodonitro-, and 4-nitro-3-hydroxy-, and their derivatives, II, 50, 51.
- 3-halogeno-derivatives, reactions of nitrous acid with, II, 50.
- 2- $\delta$ -Dimethylanilino- $\Delta^{\alpha\gamma}$ -butadienylquinoline methiodide, II, 156.
- Dimethylantracenes, examination of, for carcinogenic properties, III, 757.
- 2:3-Dimethylantraquinone-5-carboxylic acid, II, 262.
- 1:3-Dimethylantr-9-one, 10-hydroxy-, acetyl derivative, II, 229.
- Dimethylazobenzenes, 4-amino-, II, 192.
- 4:8-Dimethylazulene-6-carboxylic acid, and its derivatives, II, 417.
- 9:10-Dimethyl-1:2-benzanthracene, isologues of, II, 112.
- leukemia induction after application of, in mice, III, 147.
- skin tumours after painting with, of mice, III, 533.
- 9:10-Dimethylbenzanthr-7-one, II, 262.
- Dimethylbenzenesulphonamides, II, 136.
- 3:4-Dimethylbenzenesulphonyl chloride, II, 136.
- 2:6-Dimethylbenzoic acid, *p*-tolyl ester, II, 95.
- 2:6-Dimethylbenzoic acid, 4-bromo-, II, 91.
- 2:6-Dimethylbenzonitrile, 4-bromo-, II, 91.
- 2:3-Dimethylbenzophenone, and its 2:4-dinitrophenylhydrazones, II, 100.
- 5:4-Dimethylbenzophenone, 2-hydroxy-, II, 109.
- Dimethylbenzo[h]quinolines from petroleum, II, 31.
- 2:3-Dimethylbenzoquinone, 4:5-dibromo-, II, 267.
- 2:5-Dimethylbenzisoxazole, and 4- and 6-nitro-, II, 57.
- o-3':5'-Dimethylbenzoylbenzoic acid, II, 229.
- 3-2':6'-Dimethylbenzoyltoluene, 4-hydroxy-, II, 95.
- 3':4'-Dimethyl-3:4-benzpyrene, and its picrate, II, 50.
- Di-o-methylbenzyl chlorides, II, 85.
- 2:4-Dimethylbenzyl chloride, II, 168.
- o-3':5'-Dimethylbenzylbenzoic acid, II, 229.
- 3:5-Dimethylbenzylcarbamide, 2-hydroxy-, II, 309.
- N*-3:5-Dimethylbenzyl-*N*- (or *N'*)methylcarbamide, *N*-2-hydroxy-, II, 309.
- 1:4-Dimethyl-2-bromomethylpyrrole-3:5-dicarboxylic acid, diethyl ester, II, 330.
- $\beta\beta$ -Dimethylbutane,  $\alpha$ -chloro-, formation from, of 1:1:2-trimethylcyclopropane, II, 83.
- 2:4-Dimethyl-6-*tert*-butylbenzenesulphonic acid, amide and chloride of, II, 136.
- 2:4-Dimethylbutylbenzyl alcohols, II, 398.
- 2:4-Dimethylbutylbenzyl chlorides, II, 398.
- 2:6-Dimethyl-4-*tert*-butylbenzyl chloride, II, 85.
- Di-(3-methyl-5-*tert*-butylbenzyl) ether, *di*-2-hydroxy-, and its diacetate, II, 310.
- Di-(5-methyl-3-*tert*-butylbenzyl) ether, *di*-2-hydroxy-, II, 310.
- N*-2:4-Dimethyl-6-*tert*-butylbenzylacetamide, II, 398.
- 3(or 2):8-Dimethyl-6-*tert*-butylchroman-2(or 3)-carboxylic acid, II, 374.
- $\beta\delta$ -Dimethyl-*n*- and - $\beta$ -iso-butyl- $\Delta^{\alpha}$ -*n*-hexenoic acids,  $\alpha$ -cyano-, ethyl esters, II, 133.
- 2:6-Dimethyl-4-*tert*-butylphenyl *p*-dimethylaminostyryl ketone, and 3:5-dinitro-, II, 315.
- $\alpha\beta$ -Di-(3-methyl-5-*tert*-butylphenyl)ethane,  $\alpha\beta$ -*di*-2-hydroxy-, and its diacetate, II, 310.
- Di-(3-methyl-5-*tert*-butylphenyl)methane, *di*-2-hydroxy-, and its diacetate, II, 310.
- Di-(5-methyl-3-*tert*-butylphenyl)methane, *di*-2-hydroxy-, II, 310.
- $\beta$ - $\beta'$ -Dimethylbutyramidopropionic acid,  $\beta$ - $\gamma'$ -hydroxy-, sodium salt, II, 250.
- $\beta\beta$ -Dimethylbutyric acid,  $\alpha\gamma$ -dihydroxy-, derivatives of, II, 132.
- dl*- and (+)- $\beta\beta$ -Dimethylbutyric acids,  $\alpha\gamma$ -dihydroxy-, derivatives of, II, 132.
- $\beta\beta$ -Dimethylbutyrolactone,  $\alpha$ -hydroxy-, acetyl derivative, II, 132.
- N*- $\beta\beta$ -Dimethylbutyryltaurine, *N*- $\alpha\gamma$ -dihydroxy-, growth inhibition by, III, 61.
- $\beta$ -Dimethylisobutyrylthiophen hydrochloride, II, 236.
- N*-Dimethylcarbamylphthalimide, II, 78.
- 2:4-Dimethyl-2-carbethoxyethyl-4:5-benz-1:3-dioxoles, II, 376.
- 2:4-Dimethyl-2-carbethoxymethyl-4:5-benz-1:3-dioxole, II, 376.
- 2:4-Dimethyl-2- $\alpha$ -carbethoxyisopropyl-4:5-benz-1:3-dioxole, II, 376.
- 2:4-Dimethyl-2-carboxyethyl-4:5-benz-1:3-dioxoles, II, 376.
- 2:4-Dimethyl-2:4-carboxyisopropyl-4:5-benz-1:3-dioxole, II, 376.
- 4:6-Dimethyl-3- $\beta\beta$ -dichloroethylcoumarin, II, 108.
- 4:7-Dimethyl-3- $\beta\beta$ -dichloroethylcoumarin, 5-hydroxy-, and its acetate, II, 108.
- 1:4-Dimethyl-2-chloromethylpyrrole-3:5-dicarboxylic acid, diethyl ester, II, 381.
- 4:7-Dimethyl-3- $\beta$ -chlorovinylcoumarin, 5-hydroxy-, and its acetate, II, 108.
- 6:8-Dimethylchroman-2:3-dicarboxylic acid, II, 374.
- 5:6-Dimethylisocoumaranone, 3-bromo-4-hydroxy-, and its acetate, II, 267.
- 4:7-Dimethylcoumarin, 5-hydroxy-, benzoyl derivative, II, 420.
- Dimethylcoumarins, *mono*- and *di*-hydroxy-, and their derivatives, II, 202.
- 4:7-Dimethylcoumarin-3-acetic acid, 5-hydroxy-, II, 420.
- 5:4'-Dimethyl-2:2-di-*n*-butyl-3':4':5':6'-tetrahydrodibenzopyran, 6''-hydroxy-, II, 111.
- 2:5-Dimethyl-3:4-dicarbethoxydipyrro- $\gamma$ -pyrone, II, 207.
- 2:8-Dimethyldicyclo-(0:3:5)-decan-5-one, and *di*-bromo-, II, 286.
- 3:3'-Dimethyl-4:4'-diethylpyrroketone, and 5:5'-dibromo-, II, 204.
- 3:3'-Dimethyl-4:4'-diethylpyrroketone-5:5'-dicarboxylic acid, diethyl ester, II, 204.
- 9:10-Dimethyl-9:10-dihydroanthranol, II, 228.
- 9:10-Dimethyl-dihydrobenzanthr-7-one, II, 262.
- 5:5'-Dimethyl-3:3'-di(hydroxymethyl)diphenylmethane, 2:2'-dihydroxy-, II, 309.
- 2:2'-Dimethyl-3:3'-di-indolyl *di*- and *tri*-sulphides, II, 423.
- 3:3'-Dimethyl-2:2'-di-indolyl trisulphide, and its derivatives, II, 423.
- Dimethyl diketone. See Diacetyl.
- $\epsilon\epsilon$ -Dimethyl- $\gamma$ - $\beta'$ -dimethyl-*n*-propyl-*n*-hexan- $\beta$ -one, *aa*-dibromo-, II, 349.
- 3:3'-Dimethyl-5:5'-diisoxazolymethane, II, 384.
- 3:5'-Dimethyl-5:3'-diisoxazolymethane, and its copper salt, II, 384.
- 5:5'-Dimethyl-3:3'-diisoxazolymethane, and its copper salt, II, 384.
- Dimethyldiphenyls, 4:4'-dinitro-, and 4-nitro-4'-amino-, II, 355.
- 1:8-Dimethyldiphenylene, and its picrate, II, 402.
- 3:7-Dimethyldiphenylenedioxide, 1:5-dihydroxy-, diphosphoric ester, II, 376.
- 3:3'-Dimethyl-4:4'-diphenylenediphtalamic acid, and its potassium salt, II, 361.
- 4:4'-Dimethyl- $\alpha\gamma$ -diphenylpropane, 4:4'-dichloro-, and -dihydroxy-, II, 173.
- 5:4'-Dimethyl-2:2-di-*n*-propyl-3':4':5':6'-tetrahydrodibenzopyran, 6''-hydroxy-, II, 111.
- NN'*-Dimethyldipyrrolylmethene, synthesis and properties of, II, 271.
- 5:4'-Dimethylene-3:4-benzpyrene, and its picrate, II, 86.
- $\alpha\gamma\delta$ -Dimethylenedulcitol, structure of, and its derivatives, II, 296.
- 2:4-Dimethyl-5-ethylbenzenesulphonamide, II, 136.
- 3:4-Dimethyl-6-ethylcoumarin, 7-hydroxy-, and its acetyl derivatives, II, 109.
- Dimethylethylcoumarins, 6-hydroxy-, and their acetates, II, 202.
- N*-Dimethyl-*N'*-ethylhydrazine, and its derivatives, II, 4.
- Dimethylethylphloroglucinol, II, 260.
- 2:6-Dimethyl-4-ethylpyridine, isomeride of, and its salts, II, 180.
- 4:5-Dimethyl-2-ethylpyridine, 3 $\omega$ -4:5-trihydroxy-, and its hydrochloride, II, 30.
- 3':5'-Dimethyl-4'-ethylpyrroketone-5-carboxylic acid, 3:4-dichloro-, and its derivatives, II, 204.
- 2:3-Dimethyl-8-ethylquinoline, 5-amino-, and 5-nitro-, II, 424.
- Dimethylethyltocols, II, 235.
- Dimethylethyltocol 3:5-dinitrophenylurethanes, II, 235.
- Dimethylfluorenes, II, 398.
- 2:5-Dimethyl-3:6-*l*-galactonic acid, II, 219.
- 4:5-Dimethylglyoxaline, 2-hydroxy-, and 2-thiol-, II, 381.
- aa*-Dimethyl- $\Delta^0$ -heptadecen- $\alpha$ -ol, II, 163.
- $\beta\delta$ -Dimethylheptan- $\delta$ -ol, II, 430.
- 4- $\beta$ -Dimethyl- $\Delta^4$ -*n*-heptenylhydantoin, II, 271.
- 1:2-Dimethylcyclohexane-1:2:3-triol, II, 170.
- 1:1-Dimethyl- $\Delta^4$ -cyclohexene, 1:1-dihydroxy-, bisphenylurethane, II, 403.
- cis*-1:2-Dimethyl- $\Delta^4$ -cyclohexene-1:2-dicarboxylic acid, and 4-bromo-, anhydrides, II, 142.
- and its derivatives, II, 142.
- $\alpha\delta$ -Dimethyl- $\Delta\beta$ -*n*-hexenoic acid, ethyl and isopropyl esters, II, 131.
- 2:3-Dimethyl- $\Delta^2$ -cyclohexenol, and its derivatives, II, 170.
- ac*-Dimethylhexylacetacetic acid, ethyl ester, II, 345.
- $\alpha\beta$ -Di-2- and -3-methylcyclohexylacetylenes,  $\alpha\beta$ -*di*-1-hydroxy-, II, 224.
- a-a'*-Dimethylhexyl- $\gamma$ -butyrolactone, II, 345.
- 3(or 2):8-Dimethyl-6-cyclohexylchroman-2(or 3):8-carboxylic acid, II, 374.
- ac*-Dimethylhexylcyanoacetic acid, ethyl ester, II, 345.
- ac*-Dimethylhexylmalonic acid, ethyl ester, II, 345.
- aa*-Dimethylhomophthalic acid, 5-nitro-, anhydride, II, 22.
- Dimethylhydrazine, photolysis of, I, 372.
- Dimethylhydrazobenzene dimethiodide, II, 280.
- Dimethyl- $\beta$ -hydroxyethylsulphonium chloride and platinichloride, II, 391.
- 6:8-Dimethyl-2(or 3)-hydroxymethylchroman, II, 374.

- 5:5'-Dimethyl-3-hydroxymethyldiphenylmethane, 2:2'-dihydroxy-, II, 224.
- 2:3-Dimethyl-1-hydroxymethyl-naphthalene. See Guaiylcarbinol.
- 1:4-Dimethyl-2-hydroxymethylpyrrole-3:5-dicarboxylic acid, diethyl ester, II, 381.
- 2:4-Dimethyl-1- $\gamma$ -hydroxy- $\gamma$ -phenylpropyl-*p*-benzoquinone, II, 109.
- 3:3-Dimethylindane, 1:2-dihydroxy-, dibenzoyl derivative, II, 22.
- 3:3-Dimethylindane-1:2-dione, and 6-nitro-, and their derivatives, II, 22.
- 3:3-Dimethylindan-2-ol-1-one, II, 22.
- 3:3-Dimethylindan-1-one, 6-nitro-2-oximino-, and 2-oximino-, II, 22.
- 2:3-Dimethyl-5-indolyl methyl ketone, II, 377.
- 2:3-Dimethyl-6-indolyl methyl ketone, and its derivatives, II, 377.
- 1:1-Dimethyl-6-methyl- $\Delta^3$ -cyclohexene, 1:1-dihydroxy-, and its bisphenylurethane, II, 403.
- 2:3-Dimethylmethylrhamnoside, II, 302.
- 2:3-Dimethyl-1-naphthaldehyde. See Guai-aldehyde.
- 2:2'-Dimethyl-1:1'-naphthoin, II, 92.
- Dimethylnaphthoquinolines, and their derivatives, II, 31.
- Di-2-methyl-1-naphthyl diketone, II, 92.
- cis*- and *trans*-Di-2-methyl-1-naphthylethylenes,  $\alpha\beta$ -dihydroxy-, and their diacetates, II, 92.
- Dimethylnonylamine, and its methiodide, II, 288.
- aa*-Dimethyl- $\Delta^4$ -octadecen- $\alpha$ -ol, II, 163.
- NN'*-Dimethyloctahydrometanicotinic acid, and its dihydrobromide, II, 385.
- $\gamma\gamma$ -Dimethyl- $\Delta^8$ -octene, II, 342.
- $\gamma\zeta$ -Dimethyl- $\Delta^8$ -*n*-octen- $\Delta^8$ -in- $\zeta$ -ol, II, 246.
- $\beta\zeta$ -Dimethyl- $\Delta^4$ -octenoic acid,  $\eta$ -hydroxy-, II, 17.
- $\alpha\delta$ -Dimethyl-*n*-octoic acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- 1:2-Dimethylcyclopentane-1-carboxylamide, II, 143.
- $\delta\delta$ -Dimethylpentan- $\beta$ -one,  $\gamma$ -bromo-, II, 248.
- 2:5-Dimethylcyclopentanone, and its semicarbazone, II, 365.
- 5:5-Dimethyl- $\Delta^3$ -cyclopentene-1:3-dicarboxylic acid, II, 195.
- $\beta\gamma\gamma'$ -Dimethyl- $\Delta^4$ -pentenoamidopropionic acid,  $\beta\delta'$ -hydroxy-, sodium salt, II, 250.
- $\gamma\gamma$ -Dimethyl- $\delta\Delta^4$ -pentenolactone, II, 250.
- 2:3-Dimethyl- $\Delta^2$ -cyclopentenone, and its semicarbazone, II, 363.
- $\delta\delta$ -Dimethyl- $\Delta^8$ -pentin- $\alpha$ -ol, and its derivatives, II, 245.
- $\delta\delta$ -Dimethyl- $\Delta^8$ -*n*-pentinyl bromide, II, 245.
- Dimethylneopentylacetic acid. See *aay*-Tetramethyl-*n*-valeric acid.
- 4:6-Dimethylphenol, 2-chloro-4:6-dihydroxy-, II, 358.
- 2:4-Dimethylphenoxyacetone, and *p*-bromo-, and 6-nitro-, and their semicarbazones, II, 314.
- 2:6-Dimethylphenoxyacetone, and 4-nitro-, and their semicarbazones, II, 314.
- 1:1-Dimethyl-6-phenyl-3:4-dimethyl- $\Delta^3$ -cyclohexene, 1:1-dihydroxy-, and its bisphenylurethane, II, 403.
- Dimethylphosphine, preparation and properties of, II, 276.
- Dimethylpinacolylamine, and its derivatives, II, 132.
- 2:4-Dimethylpivalophenone, II, 168.
- 17:20-Dimethylpregnan-3( $\beta$ )-ol, II, 322.
- aa*-Dimethyl-*n*-propionic acid, allyl ester, II, 142.
- Dimethylpropionic acid, hydroxy-, derivatives of, II, 121.
- 2:4-Dimethyl-5-propylbenzenesulphonamides, II, 136.
- Di-2-methyl-5-isopropylbenzenesulphonic acid, piperazinium salt, II, 427.
- 4:7-Dimethyl-3-*n*-propylcoumarin, 6-hydroxy-, and its acetate, II, 202.
- 1:6-Dimethyl-4-isopropyl- $\Delta^1$ : $\delta^6$ -hexahydronaphthalene, II, 233.
- 4:7-Dimethyl-2-isopropyl-5-hydrindanone, II, 417.
- 4:7-Dimethyl-2-isopropyl-5-indanol, and its 3:5-dinitrobenzoate, II, 417.
- 1:6-Dimethyl-4-isopropyl-naphthalene, 5-hydroxy-, synthesis of, II, 356.
- $\alpha$ - and  $\beta$ -3:3-Di-(2'-methyl-5'-isopropylphenyl)oxindoles, 3:3-di-4'-hydroxy-, and their derivatives, II, 180.
- 2:3-Dimethyl-8-*n*-propylquinoline, 5-amino-, and 5-nitro-, II, 424.
- 2:3-Dimethylpyridine, 5-cyano-6-hydroxy-, and 6-hydroxy-, II, 180.
- 2:3-Dimethylpyridine-5-carboxylic acid, 6-hydroxy-, II, 180.
- 2:6-Dimethyl-4-pyrone, spectrum of, Raman, and structure, II, 373.
- Dimethylpyrroles, compounds of, with quinones, II, 377.
- 3(or 4):3'-Dimethylpyrromethene-4'-propionic acid, 5-hydroxy-, methyl ester, II, 333.
- Dimethylpyrrol-1-methyldioxindoles, II, 64.
- $\alpha$ -2:4-Dimethyl-3-pyrropropionic acid, II, 380.
- 2:5-Dimethylquinol  $\kappa$ -bromodecyl and decamethylene ethers, II, 195.
- Dimethylquinolines, synthesis of, and their m.ps., II, 378.
- 2:5-Dimethylquinoline, 8-amino-, and its picrate, and 8-nitro-, II, 378.
- 3:7-Dimethylquinoline, perchlorate, II, 378.
- 4:5-Dimethylquinoline, 8-amino-, and 8-nitro-, II, 378.
- 5:6-Dimethylquinoline, 8-amino-, and its picrate, and 8-nitro-, II, 378.
- 5:7-Dimethylquinoline, and its derivatives, II, 377.
- 5:7-Dimethyl-6-quinolyl methyl ketone, and its 2:4-dinitrophenylhydrazones, II, 377.
- 2:3-Dimethylrhamnose, II, 302.
- Dimethylselenetene bromide, II, 430.
- aa*-Dimethylstearic acid, II, 345.
- Dimethylsulphonimidoacetic acid, ethyl ester, II, 5.
- Dimethylsulphonyl-*dl*-alanine, II, 5.
- Dimethylsulphonylglycine, II, 5.
- Dimethylsulphonylglycyl-*L*-leucine, II, 5.
- ON*-Dimethylsulphonyltirosine, II, 5.
- $\beta\beta$ -Dimethyltetradecic acid, II, 345.
- 9:10-Dimethyltetrahydrobenzanthr-7-one, II, 262.
- 2:5-Dimethyltetrahydrofuran, 5-hydroxy-2:4-dicyano-, II, 326.
- 1:3-Dimethyl-1:2:3:4-tetrahydroquinazol-4-one, 1:3-dihydroxy-, II, 205.
- 1:10-Dimethyl-2-tetrathienyl, II, 62.
- 2:4-Dimethylthiazioic hydrochloride, II, 290.
- 4:5-Dimethylthiazole, and its derivatives, II, 36.
- 4:5-Dimethylthiazole, 2-thiol-, II, 36.
- Dimethylthiocarbamylthiolacetic acid, II, 350.
- 4:4'-Dimethylthioindigo, 5:6'-dichloro-, II, 333.
- 7:7'-Dimethylthioindigo, 5:5'-dichloro-, II, 333.
- 9:10-Dimethylthiopheno-2:3':1:2-anthraquinone, and its derivatives, II, 112.
- 4:6-Dimethylthiopheno-2:3':2:3-pyridine, and its derivatives, II, 120.
- $\delta\delta$ -Dimethylthiosemicarbazide, II, 350.
- $\beta\gamma$ - and  $\gamma\delta$ -Dimethylthiosemicarbazides, and their derivatives, II, 190.
- 1:1-Dimethyl-3:4:6-trimethyl- $\Delta^3$ -cyclohexene, 1:1-dihydroxy-, and its bisphenylurethane, II, 403.
- 3:3'-Dimethyl-5:5'-3':5'-trisoaxazole, II, 384.
- 5:5'-Dimethyl-3:5'-3':3'-trisoaxazole, II, 384.
- $\gamma\zeta$ -Dimethyl- $\Delta^8$ -*n*-undecen- $\Delta^8$ -in- $\zeta$ -ol, II, 246.
- 4-(*aa*-Dimethylundecyl)veratrole, II, 345.
- $\beta\gamma\gamma'$ -Dimethylvaleramidoeethanesulphonic acid,  $\beta\beta\delta'$ -dihydroxy-, sodium salt, II, 251.
- $\gamma\gamma'$ -Dimethylvaleramidopropionic acid,  $\beta\beta\delta'$ -dihydroxy-, sodium salt, II, 250.
- $\gamma\gamma$ -Dimethyl- $\delta$ -valerolactone,  $\beta$ -hydroxy-, II, 250.
- 2:4-Dimethylisovalerophenone, and its semicarbazone, II, 168.
- Di(morpholido)phosphoric acid, phenyl ester, II, 281.
- 2:4-Dimorpholinoquinoline, II, 378.
- 1:2-Di-3'-naphthoylaminonaphthalene, 1:2-di-2'-hydroxy-, II, 312.
- 1:1'-Dinaphthyl-2-carboxylic acid, II, 7.
- 1:2'-Dinaphthylcarboxylic acids, II, 21.
- 2:2'-Dinaphthyl-1- and -3-carboxylic acids, II, 7.
- 1:1'-Dinaphthyl-2:2'-dicarboxylic acid, methyl ester, II, 7.
- 2:2'-Dinaphthyl-3:3'-dicarboxylic acid, and its methyl ester, II, 7.
- $\beta\beta$ -1:1'-Dinaphthylethylamine,  $\beta$ -hydroxy-, and its salts, II, 58.
- $\gamma\delta$ -Di-1-naphthylhexane, II, 223.
- $\gamma\delta$ -Di-1-naphthylhexane,  $\gamma\delta$ -di-4-hydroxy-, and its dimethyl ether, II, 223.
- $\gamma\delta$ -Di-2-naphthylhexane, II, 223.
- $\gamma\delta$ -Di-2-naphthylhexane,  $\gamma\delta$ -di-6-hydroxy-, and its dimethyl ether, II, 223.
- Dineutes*, dark adaptation and phototropism in, III, 224.
- Dinicotinylidenediketopiperazine, II, 422.
- Dinonylsulphonylhexane, II, 163.
- Di-*n*-octyl disulphide, II, 162.
- Diocylsulphonylhexane, II, 163.
- Diodone, pharmacological action of, III, 637.
- Diodrast, cerebral arteriography with, III, 204.
- determination of, in blood and urine, III, 428.
- Dioestrus, caused by luteinising hormone and antigonadotropic serum in persistent oestrus rats, III, 384.
- Diolefines, conjugated, preparation of, II, 293.
- from allylic chlorides, II, 126.
- Dioleil sulphide, II, 390.
- Diosgenin, sources of, III, 862.
- Dioxan, b.p. of mixtures of methyl alcohol and, I, 293.
- density, refractive index, and viscosity of mixtures of methyl alcohol and, I, 293.
- electric moments of inorganic halides in, I, 234.
- equilibrium of, with lithium chloride, water, and, I, 267.
- with silver nitrate and water, I, 145.
- reaction of, with magnesium butenyl bromide, II, 293.
- viscosity of formamide solutions of, I, 140.
- 1:4-Dioxan, compounds of, with metallic halides, II, 30.
- 1:4-Dioxan, 2:5-dibromo-, and -dihydroxy-, and their derivatives, II, 179.
- Dioxolan, oxygen absorption by, II, 376.
- Dioxolones, fission of, by Grignard reagents, II, 421.
- d*- $\alpha\beta$ -Dipalmitin, and its derivatives, II, 130.
- Dipentadecylsulphonylhexane, II, 163.
- Dicyclopentadiene, decomposition and formation of, II, 279.
- preparation of, and its dielectric constants, II, 83.
- Dineopentylcarbinyl ketones, II, 348.
- ay*-Dicyclopentyl- $\gamma$ -phenyl- $\alpha$ -*p*-bromophenylpropan- $\alpha$ -ol, II, 20.
- Dipeptidases in intestinal mucosa, III, 342.
- Dipeptides, fission of, in carcinomatous and non-carcinomatous sera, III, 250.
- of *d*-amino-acids, II, 77.
- 3:3'-Diphenacyl-*p*-pyromellitide, II, 96.
- Diphenanthrenyl 9:9'-disulphide, II, 180.
- Di- $\beta\beta$ -9-phenanthrylethylamine,  $\beta$ -hydroxy-, and its derivatives, II, 115.
- $\beta\beta$ -Di-*p*-phenetylbutyric acid, II, 282.
- $\beta\beta$ -Di-*p*-phenylethylamine,  $\beta$ -hydroxy-, and its derivatives, II, 87.
- $\alpha\delta$ -Diphenoxybutane, 4:4'-dicyano-, II, 174.
- $\alpha\kappa$ -Diphenoxydecane, 4:4'-dicyano-, II, 174.
- $\alpha\beta$ -Diphenoxyethane, 4:4'-dicyano-, II, 174.
- $\alpha\beta$ -di-*o*-iodo-, II, 311.
- ay*-Diphenoxyheptane, 4:4'-dicyano-, II, 174.
- $\alpha\zeta$ -Diphenoxyhexane, 4:4'-dicyano-, II, 174.
- $\gamma\delta$ -Di-4-phenoxyhexane,  $\gamma\delta$ -di-4'-hydroxy-, and its dimethyl ether, II, 223.
- Diphenoxymethane, 4:4'-dicyano-, II, 174.
- $\alpha\epsilon$ -Diphenoxypentane, 4:4'-dicyano-, II, 174.
- $\beta\beta$ -Di-*p*-phenoxyphenylethylamine,  $\beta$ -hydroxy-, and its derivatives, II, 87.
- $\gamma\delta$ -Di-*p*-phenoxyphenyl- $\Delta^{8\delta}$ -hexadiene, II, 223.
- $\gamma\delta$ -Di-*p*-phenoxyphenylhexane, II, 223.
- $\gamma\delta$ -Di-*p*-phenoxyphenyl-*n*-hexane- $\gamma\delta$ -diol, II, 223.
- $\gamma\delta$ -Di-*p*-phenoxyphenylhexene, II, 223.
- ay*-Diphenoxypropane, 4:4'-dicyano-, II, 174.
- 5:5'-Di- $\beta$ -phenoxy-*n*-propylbarbituric acid, II, 151.
- Di-( $\gamma$ -phenoxypropyl)malonic acid, II, 77.
- $\omega\omega$ -Diphenoxyxylene,  $\omega\omega$ -di-4'-cyano-, II, 174.
- Diphenyl, and its derivatives, II, 398.
- polymerides of, with polyvinyl chloride, I, 21.
- spectra of, absorption, ultra-violet, and its derivatives, I, 81.
- Diphenyl, 4-chloro-4'-hydroxy-, 4'-acetyl derivative, II, 401.
- fluoro-derivatives of, II, 354.
- substituted derivatives, resonance in, II, 354.

- Diphenyl ether, hydroxy-carbonyl derivatives of, II, 260.  
 4:4'-dicyano-, II, 173.  
 ethers, Friedel-Crafts reaction with, II, 362.  
 sulphide, 4:4'-dicyano-, II, 173.  
*o*-Diphenyl compounds, long-chain, II, 399.  
 7:7-Diphenyl-8-acenaphthene, 7:7-*di-p*-hydroxy-, II, 223.  
 Diphenyl-6-acetamido-*m*-tolylcarbinol, II, 87.  
 Diphenyl-6-acetamido-*p*-tolylmethane, II, 87.  
 Diphenylacetomorpholinamide, II, 115.  
 Diphenylacetic acid, and  $\alpha$ -chloro-,  $\beta$ -piperidinoethyl esters, hydrochlorides, II, 237.  
 Diphenylacet- $\beta$ -morpholinoethylamide, II, 334.  
 $\beta$ -Diphenylacrylic acid,  $\alpha$ -cyano-, ethyl ester, II, 133.  
 Diphenylamides, alkali, reaction of, with aromatic nitro-compounds, II, 169.  
 4:4'-Di-*N*-phenylamidindiphenyl, dihydrochloride, II, 173.  
 Diphenylamine, f.p. of binary mixtures with, I, 294.  
 Diphenylamine, 2-chloro-2'-nitro-, II, 425.  
 4:4'-dicyano-, II, 174.  
 4-nitroso-, II, 355.  
 Diphenylamine-2-carboxylic acid, chloronitroderivatives, II, 237, 289.  
 Diphenylamine-4-carboxylic acid, 2-bromo-6-amino-, and -6-nitro-, and their derivatives, II, 425.  
 Diphenyl-4'-arsenoxide, 4-amino-, and its acetyl derivative, II, 337.  
 Diphenyl-4'-arsinic acid, 4-amino-, and its acetyl derivative, 4-nitro-, 3-nitro-4-amino-, and 3-nitro-4-hydroxy-, II, 337.  
 $\alpha$ -Di-(*p*-phenylbenzamidrazino)ethylene, and its dihydrochloride, II, 173.  
*o*-Diphenylbenzene. See *o*-Terphenyl.  
 Diphenyl-2-benzofurylcarbinol, II, 108.  
 2:3-Diphenylbenzochromenium perchlorate, II, 421.  
 2:3-Diphenyl-5:6-benzopyran, II, 421.  
 2:3-Diphenyl-5:6-benzopyrenium perchlorate, II, 421.  
 $\beta$ -Diphenyl- $\alpha$ -benzylethylamine,  $\beta$ -hydroxy-, hydrochloride, II, 115.  
 3:3-Diphenyl-2-benzylhydrindene, II, 144.  
 Diphenylbisorlupin, trihydroxy-, triacetyl derivative, II, 266.  
 Diphenyl-*o*-bromophenylmethyl peroxide, II, 399.  
 $\alpha$ -Diphenylbutadiene,  $\alpha$ -*di-p*-cyano-, II, 173.  
 Diphenylbutadienes, substituted, II, 304.  
 $\alpha$ -Diphenylbutane,  $\beta$ -amino-, and its derivatives, II, 168.  
 $\beta$ -Diphenylbutane,  $\alpha$ -diamino-, and its dihydrochloride, II, 168.  
 $\beta$ -Diphenyl-*n*-butylamine, and its derivatives, II, 168.  
 $\alpha$ -Diphenyl-*n*-butyric acid,  $\alpha$ -hydroxy-, and its esters, II, 220.  
 $\gamma$ -Diphenylbutyric acid, lactone, and  $\gamma$ -hydroxy-, II, 257.  
 $\gamma$ -Diphenyl-*n*-butyric acid,  $\gamma$ -cyano-, II, 226, 284.  
 $\alpha$ -Diphenyl- $\gamma$ -butyrolactone, II, 253.  
*N,N'*-Di-(*a*-phenylbutyl)carbamide, II, 225.  
 Diphenylcarbethoxymethyl peroxide, II, 13.  
 Diphenyl-*m*-carboxyphenylarsine, oxide, II, 183.  
 3:3-Diphenyl-2-chlorobenzylidene-1-hydrindones, II, 144.  
 Diphenyl-*m*-chlorophenylcarbinol, II, 399.  
 5-Diphenyl-*p*-chlorophenylguanidine hydrochloride, II, 169.  
 Diphenyl-*m*-chlorophenylmethyl chloride and peroxide, II, 399.  
*N,N'*-Diphenyl-6-chloro-4-quinolylamidine, II, 283.  
 $\alpha$ -Diphenyl- $\Delta^4$ -decadiene, II, 399.  
 $\alpha$ -Diphenyldecane, II, 399.  
 $\alpha$ -Diphenyldecane- $\alpha$ -diol, II, 399.  
 $\alpha$ -Diphenyl- $\beta$ -*di-p*-acetoxypheylbutane,  $\beta$ -*di*-hydroxy-, II, 316.  
 Diphenyl-4:4'-diarsinic acid, and 3-nitro-, II, 337.  
 Diphenyl- $\gamma$ -dibutylaminopropylcarbinol, hydrochloride, II, 194.  
 $\alpha$ -Diphenyl- $\alpha$ -*di-p*-chlorophenylbutatriene, II, 49.  
 $\alpha$ -Diphenyl- $\alpha$ -*di-p*-chlorophenylbutenediols, II, 49.  
 Diphenyl- $\gamma$ -diethylaminopropylcarbinol, and its hydrochloride, II, 193.  
 $\alpha$ -Diphenyl- $\alpha$ -*di*-ethylethylene. See  $\gamma$ -Diphenyl- $\Delta^7$ -hexene.  
 1:2-Diphenyl-3:4-dihydronaphthalene, II, 253.  
 6:13-Diphenyl-5:14-dihydropentacene, 5:14-*di*-bromo-, II, 321.  
 6:13-Diphenyl-6:13-dihydropentacene, 6:13-*di*-bromo-, II, 321.  
*trans*-6:13-Diphenyl-6:13-dihydropentacene-6:13-*di*-ol, II, 320.  
 Diphenyldimethylarsonium salts, *di-p*-bromo-, and *di*-4-bromo-3-nitro-, II, 121.  
 3:4-Diphenyl-2:5-dimethylbenzoic acid, methyl ester, II, 319.  
 3:4-Diphenyl-2:5-dimethylbenzophenone, II, 319.  
 3:4-Diphenyl-5:7-dimethylcoumarin, II, 360.  
 4:5-Diphenyl-3:6-dimethyl-1:2-dihydrophthalic acid, diethyl ester, II, 319.  
 4:5-Diphenyl-3:6-dimethyl-1:2-dihydrophthalic acids, dimethyl esters, II, 319.  
 4:5-Diphenyl-3:6-dimethyl-1:2-dihydrophthalic anhydride, II, 319.  
*aa*-Diphenyl- $\zeta$ -(dimethyl- $\delta$ - $\beta'$ -dimethyl-*n*-propyl-*n*-heptan- $\alpha$ -ol- $\gamma$ -one, II, 349.  
 3:6-Diphenyl-2:5-dimethyl-1:4-dioxan, II, 327.  
*N,N'*- $\beta$ -Diphenyl-*aa*-dimethylethylcarbamide, II, 305.  
 $\delta$ -Di-( $\beta$ -phenyl-*aa*-dimethylethyl)carbamide, II, 305.  
 2:5-Diphenyl-3:4-dimethylfuran, 2:5-*di-p*-bromo-, II, 176.  
 1:3-Diphenyl-2:2-dimethylhydrindene, 1:3-*di*-chloro-, II, 146.  
 1:3-*di*-hydroxy-, II, 146.  
 1:2-Diphenyl-3:3-dimethylindane-1:2-diol, II, 22.  
 4:5-Diphenyl-3:6-dimethylphthalic acid, diethyl ester, II, 319.  
 4:5-Diphenyl-3:8-dimethyl- $\Delta^4$ -tetraphthalic acid, 1:2:3:6-tetrabromo-, dimethyl ester, II, 319.  
 Diphenyldimethyltruxone, and its oxime, II, 364.  
 Diphenyl-4:4'-disulphonyl fluoride, II, 354.  
 $\alpha$ -Diphenyl- $\alpha$ -*di-p*-tolylbutenediols, II, 49.  
 Diphenylene, spectrum of, absorption, I, 81.  
 Diphenylene dioxide, derivatives, synthesis of, II, 376.  
 dioxide, 2:6-*di*-hydroxy-, and its diphosphoric ester, II, 376.  
 4:4'-Diphenylenediphtalamic acid, potassium and sodium salts, II, 360.  
 1:8-4:5-Diphenylenenaphthalene, II, 357.  
 3:3-Diphenyl-2-*o*-ethoxybenzylhydrindene, II, 144.  
 3:3-Diphenyl-2-*o*-ethoxybenzylidene-1-hydrindones, II, 144.  
 $\beta$ -Diphenylethylamine, and  $\beta$ -hydroxy-, and their salts, II, 115.  
 5:5-Di- $\beta$ -phenylethylbarbituric acid, II, 151.  
*aa*-Diphenylethylene, dimerisation of, II, 304.  
 structure of, from dipole moments, I, 387; II, 398.  
*aa*-Diphenylethylene, *aa*-*di-p*-bromo-, and *aa*-*di-p*-fluoro-, II, 398.  
 5-chloro-2-amino-4'-hydroxy-, and its dibenzoyl derivative, II, 273.  
 Diphenyl-*o*-fluorophenylmethyl peroxide, II, 399.  
 Diphenylformazylbenzene, cobalt, cupric, and nickel complexes, II, 89.  
*aa*-Diphenylglutaric acid, and its derivatives, II, 226, 284.  
 Diphenylglycolic acid,  $\beta$ -piperidinoethyl ester, acetate methobromide, II, 237.  
 $\alpha$ -Diphenyl- $\Delta^6$ -hexadiene, II, 399.  
 $\alpha$ -Diphenylhexane, II, 399.  
 $\gamma$ -Diphenyl-*n*-hexane,  $\gamma$ -*di-p*-hydroxy-, polynuclear analogues of, II, 223.  
 See also Hexaestrol.  
 $\alpha$ -Diphenylhexane- $\alpha$ -*di*-ol, II, 399.  
 $\gamma$ -Diphenyl- $\Delta^7$ -hexene, and  $\gamma$ -*di-p*-amino-, and  $\gamma$ -*di-p*-bromo-, and their derivatives, II, 398.  
 Diphenylhomophthalic acid, anhydride, II, 23.  
 3:4-Diphenylhydantoin, II, 379.  
 5-Diphenylhydantoin, 1:3-*di*-chloro-, II, 217.  
 Diphenylhydantoinic acid, sodium salt. See Dilantin.  
 2:3-Diphenylhydrindene-1-carboxylic acid, and its methyl ester, II, 253.  
 3:3-Diphenyl-1-hydrindone, *cis-trans*-isomerides from, II, 144.  
 3:3-Diphenylindane-1:2-dione, and its derivatives, II, 23.  
 1:3-Diphenylindazole, 4-bromo-5-hydroxy-, and 5-hydroxy-, and its acetate, II, 272.  
 1:3-Diphenyl-4:5-indazolequinone, II, 272.  
 Diphenyl-*p*-iodophenylcarbinol, II, 399.  
 Diphenylmethane, 4:4'-diamino-, 4'-acetyl derivative, II, 89.  
 3:3':5:5'-tetrachloro-, and 3:3'-dichloro-4:4'-*di*-hydroxy-, and its diacetate and dibenzoate, II, 112.  
*pp'*-difluoro-, II, 398.  
*aci*-nitro-, benzophenoxime ester, and its derivatives, II, 315.  
 Diphenylmethane-4:4'-diphtalamic acid, II, 361.  
 3:3-Diphenyl-2-methoxybenzylhydrindenes, II, 144.  
 3:3-Diphenyl-2-methoxybenzylidene-1-hydrindones, II, 144.  
*NN'*-Diphenyl-*N*-methylacetamidine, II, 63.  
 Diphenylmethylamine, reaction of, with dimethyl sulphate, II, 307.  
 Diphenylmethylarsine, complexes of, with rhodous halides, I, 337.  
 copper derivatives of, II, 67.  
 3:3-Diphenyl-2-methylbenzylhydrindenes, II, 144.  
 3:3-Diphenyl-2-methylbenzylidene-1-hydrindones, II, 144.  
 3:3-Diphenyl-1-methyl- $\beta$ -naphthoxindole, II, 329.  
 4:5-Diphenyl-2-methyloxazole, dipole moment of, I, 289.  
 3:4-Diphenyl-6-methylphthalic anhydride, II, 320.  
*aa*-Diphenyl-3-methylphthalide, II, 97.  
 $\alpha$ -Diphenyl- $\beta$ -methylpropane,  $\alpha$ -*di-p*-hydroxy-, II, 9.  
 1:3-Diphenyl-2-methyl-5-isopyrazolone, 4-cyano-, II, 380.  
 1:2-Diphenylnaphthalene, II, 253.  
 $\alpha$ -Diphenyl-1:8-naphthalide, II, 142.  
 7:7'-Di-4-phenylperinaphthyl, 7:7'-*di*-6-hydroxy-, II, 22.  
*aa*-Diphenyl- $\Delta^{10}$ -octadecadiene, II, 399.  
*aa*-Diphenyloctadecane, II, 399.  
*aa*-Diphenyloctadecane- $\alpha$ -diol, II, 399.  
*aa*-Diphenyloctadecane- $\alpha$ -dione, II, 399.  
 $\beta$ -Diphenyl- $\Delta^8$ -octadiene, II, 137.  
 2:2-Diphenyl- $\Delta^{14}$ -octahydrobenzophenone, and its tetrabromide, II, 261.  
 $\beta$ -Diphenyl-*n*-octane- $\beta$ -*di*-ol, II, 137.  
 3:3-Diphenyloxindole, II, 331.  
 6:13-Diphenylpentacene, and its derivatives, II, 320, 321.  
 6:13-Diphenylpentacene-5:7:12:14-diquinone, II, 321.  
 5:14-Diphenylpentacene-6:13-quinone, II, 320.  
 $\alpha$ -Diphenyl- $\Delta^{27}$ -pentadienoic acid,  $\alpha$ -*di-p*-nitro-, II, 173.  
 $\alpha$ -Diphenyl- $\alpha$ -9-phenanthrylsuccinic anhydride, and its derivatives, II, 168.  
 1:3-Diphenyl-4-*p*-phenetyliminomethyl-5-pyrazolone, II, 380.  
 2:3-Diphenyl-6-*a*-phenylvinyl-*p*-xylene, II, 319.  
 Diphenylphosphonitrile, tetrachloro-, and its derivatives, II, 430.  
*aa*-Diphenyl- $\beta$ -picrylhydrazine, dipole moment of, I, 289.  
*aa*-Diphenyl- $\beta$ -picrylhydrazyl, dipole moment of, I, 289.  
 Diphenyl- $\gamma$ -piperidinopropylcarbinol, hydrochloride, II, 193.  
 $\alpha$ -Diphenylpropane, 4:4'-dicyano-, II, 173.  
 $\beta$ -Diphenylpropionamide, II, 115.  
 Diphenylpyromellitidiazones, II, 96.  
 3:3'-Di-*p*-pyromellitide, 3:3'-*di-p*-hydroxy-, II, 96.  
 Diphenylselenium dichloride, crystal structure of, I, 230.  
 Diphenylsulphin-*p*-toluenesulphonylimine, II, 128.  
 Diphenylsulphonamide, 2-amino-, II, 375.  
 Diphenyl-4-sulphonamide, 4'-amino-, II, 307.  
 Diphenyl-4-sulphonanilide, 4'-amino-, and 4'-nitro-, II, 307.  
 Diphenylsulphone, 4:4'-diamino-, carboxylic acid derivatives of, II, 140.  
 3-chloro-2-nitro-, II, 49.

Diphenylsulphone, 4:4'-dicyano-, II, 173.  
 Diphenylsulphones, chloronitro-, mobility of groups in, II, 49.  
*dihydroxy-*, and their derivatives, II, 403.  
 Diphenylsulphone-4:4'-bisazo- $\beta$ -naphthol, II, 222.  
 Diphenylsulphone-4:4'-bisazosalicylic acid, II, 222.  
 Diphenylsulphone-*NN'*-diglucosesulphonic acid, *pp'*-diamino-, sodium salt, treatment with, of tuberculosis, III, 479.  
 Diphenyl-4-sulphonyl fluoride, II, 354.  
*aa*-Diphenyltetradecane, II, 125.  
*aa*-Diphenyl- $\Delta^6$ -tetradecene, II, 125.  
 1:2-Diphenyl-1:2:3:4-tetrahydronaphthalene, II, 253.  
 6:13-Diphenyl-5:7:12:14-tetrahydropentacene, 5:7:12:14-tetrabromo-, II, 321.  
 $\alpha\gamma$ -Diphenyl- $\alpha\gamma$ -tetramethyldiaminodiphenylallyl alcohol, II, 194.  
 Diphenyltetramethyldiaminodiphenylvinylcarbenium perchlorates, II, 194.  
 1:10-Diphenyl-2-tetrathienyl, II, 62.  
 2:2'-Diphenylthiadicarbocyanine, iodide, II, 239.  
 2:2'-Diphenylthiacyanine iodide, II, 239.  
 2:2'-Diphenylthiadibenzocyanine iodide, II, 239.  
 2:2'-Diphenylthiadibenzocyanine, 2:2'-*di-o*-nitro-, perchlorate, II, 239.  
 2:5-Diphenylthiol-*p*-benzoquinol, 2:5-*di-p'*-nitro-, II, 24.  
 2:5-Diphenylthiol-*p*-benzoquinone, 2:5-*di-p'*-nitro-, II, 24.  
 2:3-Diphenylthiol-1:4-naphthaquinol, 2:3-*di-o*-nitro-, II, 24.  
 2:5-Diphenylthiolquinol, 2:5-*di-o*-nitro-, II, 24.  
*NN*-Diphenyl-*N'*-*o*-tolylacetamidine, II, 63.  
 Diphenyl-*m*-tolylarsine, II, 183.  
 $\alpha\delta$ -Diphenyl- $\alpha\delta$ -*p*-tolylbutatriene, II, 49.  
 $\alpha\beta$ -Diphenyl- $\beta$ -*p*-tolyl- $\beta$ -2-hydroxy-5-methylphenylpropionophenone, II, 109.  
 2:3-Diphenyl-4-*p*-tolyl-6-methyl-1:2-benzopyran-2-ol, II, 109.  
 2:3-Diphenyl-4-*p*-tolyl-6-methyl-1:4-benzopyran-4-ol, II, 109.  
*s*-Diphenyltriazene, compounds of, with mercuric salts, I, 308.  
 2:4-Diphenyl-1:2:3-triazole, and *tri*- and *tetra*-nitro-, II, 428.  
*aa*-Diphenyl- $\beta\beta\beta$ -trimethyl- $\delta$ - $\beta'\beta'$ -dimethyl-*n*-propyl-*n*-heptan- $\alpha$ -ol- $\gamma$ -one, II, 349.  
 1:8-Diphenyl-2-trithienyl, II, 62.  
 $\beta\delta$ -Diphenyl-*n*-valeric acid,  $\beta$ -hydroxy-, and its ethyl ester, II, 220.  
 Diphenylvinylxanthylum perchlorate, II, 194.  
 2:3-Diphenyl-*p*-xylene, II, 319.  
*p*-Diphenyl- $\beta$ -9-anthranilylvinyl ketone, II, 284.  
 Diphenyl-*n*-heneicosyl ketone, II, 85.  
*c*-Diphenyl-*n*-hexacosane, II, 85.  
*c*-Diphenyl- $\Delta^6$ -*n*-hexacosene, II, 85.  
*p*-Diphenylphthalamic acid, II, 361.  
 Diphosphoanerin, reduction rate of, III, 470.  
 Diphosphopyridine nucleotide, effect on, of dimethylaminoazobenzene fission products, III, 536.  
 $\alpha\delta$ -Dipthalimidobutane, II, 406.  
 $\alpha\beta$ -Dipthalimidoethane, II, 406.  
 Dipthalimidomethane, II, 406.  
 $\alpha\epsilon$ -Dipthalimidopentane, II, 406.  
 $\alpha\beta$ - and  $\alpha\gamma$ -Dipthalimidopropanes, II, 406.  
 Dipthalyl-*o*-anisidine, II, 361.  
 Dipthalylbenzidine, formation and structure of, II, 360.  
 Dipthalyl-*o*-tolidine, II, 361.  
 Diphtheria, antitoxin, action on, of papain, III, 936.  
 purification and crystallisation of, III, 422.  
 purified, electrophoresis and sedimentation of, III, 422.  
 bacilli of. See under Bacilli.  
 carriers, treatment of, with sulphanilamide intranasally, III, 919.  
 with sulphathiazole snuff, III, 336.  
 diagnosis of, tellurite test for, III, 718.  
 with Hoyle's medium, III, 646.  
 immunisation against, III, 271, 422.  
 and against pertussis and tetanus, III, 781.  
 with alum toxoid, III, 780, 781.  
 in Baltimore, III, 557.  
 in Halifax, III, 646.

Diphtheria, malignant, blood transfusion in, III, 493.  
 toxin, chemotaxis against, III, 70.  
 culture media of, III, 719.  
 resistance to, in rats, III, 65.  
 survival of rabbits injected with, effect of cholesterol on, III, 940.  
 toxin and toxoid, purification of, III, 347.  
 treatment of, with sulphapyridine in calves, III, 627.  
*Diplococcus mucosus*, III, 347.  
 Dipole moments, in solution, I, 9.  
 measurement of, by molecular beam method, I, 10.  
 solvent effect in, I, 91, 258, 353.  
 molecular structure and, I, 227.  
 of free radicals, I, 43.  
 of molecules, I, 43.  
 1:3-Dipropionylphenobarbital, II, 180.  
 Di-*n*-propyl selenide dibromide, II, 430.  
 mercurichloride, II, 430.  
 disulphide,  $\gamma\gamma'$ -dihydroxy-, II, 247.  
 4-Di-*n*-propylamino-3-benzoyl-6-phenyl-2-pyrone, II, 261.  
 $\beta$ -Di-*n*-propylamino- $\alpha\gamma$ -dibenzoylerotonic acid, ethyl ester, II, 261.  
 $\alpha$ -Di-*n*-propylaminopropiophenone,  $\beta$ -bromo-, hydrobromide, II, 113.  
 Diisopropylhydrazomethane, and its picrate, II, 4.  
 $\beta\delta\delta$ -Diisopropylidene-*L*-fucitol, and its derivatives, I, 296.  
 1:2-3:4-Diisopropylidene-*D*-galactopyranose triphenylmethyl ether, II, 6.  
 Diisopropylidenegalactose, reaction of, with triphenylmethyl chloride in pyridine, II, 6.  
 1:2-5:6-Diisopropylidene-*D*-glucofuranose triphenylmethyl ether, II, 6.  
 Diisopropylideneglucose, reaction of, with triphenylmethyl chloride in pyridine, II, 6.  
 Diisopropylidenesorbitose, reaction of, with triphenylmethyl chloride in pyridine, II, 6.  
 Diisopropyl ketone, action of Grignard reagents on, II, 348.  
 5:5-Di-*n*-propyloxazolidine-2:4-dione. See Propazone.  
 5:5-Dipyrazolyl, II, 334.  
 2:2-Dipyridyl, use of, in iron determination, III, 564.  
 Di-2-pyridyl disulphide, *di*-5-amino-, diacetyl derivative, II, 423.  
 2:2'-Dipyridyl sulphide dihydrobromide, II, 222.  
 2:2'-Dipyridylsulphone, II, 222.  
 7:7-Dipyridinogin, II, 206.  
 $\alpha\beta$ -Dipyrrolidino- $\beta$ -phenylpropionophenone, II, 149.  
 Dipyrrolimethenes, aromaticity of, II, 271.  
 2:4-Di-8'-quinolylidenequinoline, II, 378.  
 3:6-Di-2'-quinolylidibenzthiophen, II, 62.  
 $\alpha\beta$ -Di-4-quinolylethylene, II, 114.  
 Diradicals, II, 220.  
*Dirofilaria immitis*, antigenic properties of microfilaria from, III, 347.  
 Disalicylic anhydride, II, 360.  
 $\beta$ -Disalicylide, composition and mol. wt. of, II, 312.  
 Disalicylides, isomerism of, II, 312, 360.  
 Disalicyl-*yl* disulphide, and its diacetyl derivative, II, 312.  
 Discrimination, neural mechanism for, III, 222.  
 See also under Eyes.  
 Diseases, abdominal. See under Abdomen.  
 air-borne, III, 497.  
 allergic, III, 561.  
 treatment of, with histamineazoprotein, III, 499.  
 anorectum, III, 895.  
 biliary tract. See under Biliary tract.  
 bone. See Bone disease.  
 caisson. See Caisson disease.  
 cardiovascular, incidence of, effect of population ageing on, and its prevention, III, 373.  
 kidney in relation to, III, 205, 666.  
 chronic, low-grade, basal metabolic rate in, III, 541.  
 with anaemia, copper and iron retention changes in liver and spleen in, III, 796.  
 coeliac, pancreatic enzymes in duodenal juice in, III, 692.

Diseases, contagious, in schools, III, 346.  
 cornual, symptoms and pathology of, III, 313.  
 coronary, cardiac vibrations in, III, 13.  
 cystic, III, 691.  
 deficiency, bone. See under Bone disease.  
 galactose absorption from gastro-intestinal tract in, III, 529.  
 epidemic, control of, III, 556.  
 extrapyramidal tract, treatment of, surgery in, III, 518.  
 fat-deficiency, in rats, III, 43.  
 gastro-intestinal, dietetic treatment of, III, 144.  
 hæmophilia-like, in swine, III, 369.  
 hæmorrhagic, systemic, giant cells in, III, 88.  
 hæmorrhagic, agnogenic, clot formation defect in, III, 195.  
 sweet clover, III, 573.  
 treatment of, with vitamin-*K*, in newborn, III, 292.  
 hepatic. See Liver disease.  
 hypertensive. See Hypertension.  
 infectious, III, 63.  
 histological kidney changes in, III, 531.  
 in closed communities, III, 497.  
 in troops, III, 346.  
 incidence of, in allergic and non-allergic persons, III, 70.  
 intestinal. See under Intestines.  
 magnesium in blood in, spectrum of, III, 370.  
 malignant, radioactive phosphorus tracer studies in, III, 758.  
 mental, associated with drug taking, III, 844.  
 due to rheumatic heart disease, III, 18.  
 mental endowment and morbidity rate for, in children, III, 216.  
 Pavlov reflexes in, III, 674.  
 serum-proteins in, III, 874.  
 treatment of, with shock, III, 379, 447.  
 mental and nervous, cerebrospinal fluid in, choline level in, III, 21.  
 metabolic. See under Metabolism.  
 neoplastic, malignant, treatment of, with radioactive phosphorus, III, 616.  
 nervous, vitamin-*B* deficiency and, III, 586.  
 neuromuscular, atrophy, effect on, of mecholyl, potassium chloride, and prostigmine, III, 548.  
 treatment of, with  $\alpha$ -tocopherol, III, 737.  
 with vitamin-*B*<sub>6</sub> and -*E*, III, 105.  
 with vitamin-*E* and  $\alpha$ -tocopherol, III, 376.  
 neuropsychiatric, treatment of, with vitamins, III, 538.  
 pullorum. See Pullorum disease.  
 respiratory, allergic, in childhood, III, 515.  
 skin. See Skin diseases.  
 surgical, hypoproteinæmia in, relation of serum-protein to hepatic function and ascitic fluid transfusion influence in, III, 798.  
 vascular, III, 296.  
 obliterative, treatment of, with sympathectomy, III, 204.  
 peripheral, treatment of, III, 734, 878.  
 vasodilatation tests in, III, 668.  
 virus, in guinea-pigs, III, 560.  
 neurotropic, in man, III, 352.  
 Dermatoma, III, 232.  
 Disinfectants, cetyltrimethylammonium bromide, III, 922.  
 concentration of, in relation to disinfecting time, III, 62.  
 effect of, on mastitis streptococci, III, 547.  
 halogenised phenols as, III, 547.  
 skin, alkylmercuric chlorides as, III, 547.  
 Disinfection, in obstetrics and gynaecology, III, 336.  
 Disperse systems. See under Systems.  
*d*- $\alpha\beta$ -Distearin, and its derivatives, II, 130.  
 Distillation, "constants" for, I, 23.  
 fractional, I, 308.  
 Distillation apparatus, I, 343, 412.  
 continuous, laboratory, I, 118.  
 for batch fractionation, I, 412.  
 for corrosive liquids, I, 282.  
 fractional, laboratory, glass, I, 159.  
 water-jacketed receiver for, I, 75.  
 laboratory, column head for, I, 188.  
 low-pressure, immersion still-head for, I, 188.

- Distribution coefficients**, of solute between two immiscible liquids, I, 298.
- Distyrene**, oxidation of, II, 220.
- Distyryl ketones**, substituted, II, 19.
- 2,5-Distyryltetraphthalic acid**, 2,5-di- $\alpha$ -cyano-, II, 96.
- 2,6-Di-*p*-sulphamylanilino-4-methylpyrimidine**, II, 151.
- 2,6-Di-*p*-sulphamylanilino-4-methylpyrimidine**, II, 151.
- 4,4'-Disulphanilamidodiphenylmethane**, diacetyl derivative, II, 307.
- 4,4'-Disulphanilamidodiphenylsulphone**, II, 307.
- 2,5-Disulphanilamidopyrimidine**, II, 272.
- Disulphanilylbenzidine**, II, 139.
- N,N'*-Disulphanilyl-L-cystine**, II, 307.
- Disulphanilylethyleneguanidine**, II, 222.
- Disulphanilyl-*p*-phenylenediamine**, and its diacetyl derivative, II, 139.
- Disulphanilyl-*m*-toluylenediamine**, and its diacetyl derivative, II, 139.
- 4-( $\gamma$ -Disulpho-*p*-phenylpropylamino)-*m*-cresol**, 6-chloro-, barium and sodium salts, II, 308.
- Diterpenes**, II, 106, 107, 305, 324, 370, 417.
- synthetic, chemistry of, II, 325.
- Di-1,2:3,4-tetra-acetyl- $\beta$ -D-glucosyl carbonate**, II, 302.
- Ditetradecylsulphonylethane**, II, 163.
- Ditetrhydro-1-naphthyl ether**, II, 403.
- N,N'*-Di- $\beta$ - $\gamma$ -tetramethyl-*n*-valerylcarbamide**, II, 70.
- 4,4'-Dithiazolyl**, metallic salt complexes with, II, 384.
- $\alpha$ -Di-2-thienylethane**, II, 269.
- Di- $\alpha$ -2-thienylethyl ether**, II, 179.
- 2-Dithiobenzoyl**, identity of, with *o*-trisulphidobenzoic acid thioanhydride, II, 58.
- 9:10-Dithiocycanoanthracene**, II, 11.
- Dithionates**. See under Sulphur.
- Dithizone**, analysis of metals in solutions with, I, 278.
- 2:3-Di-*p*-toluenesulphonylchlorobenzene**, II, 49.
- 2:6-Di-*p*-toluenesulphonyl-4'-methylidiphenyl sulphide**, II, 49.
- 2:6-Di-*p*-toluenesulphonylpiperidinobenzene**, II, 49.
- 1:4-Di-*p*-toluidinoanthraquinone**, 6:7-dibromo-, 6:7-dichloro-, and 6:7-dihydroxy-, II, 177.
- 4:8-Di-*p*-toluidinoanthraquinone**, II, 24.
- 4:8-Ditoluidino-1:5-dihydroxyanthraquinone**, II, 177.
- 5:8-Di-*p*-toluidinoquinizarin**, II, 25.
- 3:4-Ditolylacetaldehyde**, and its semicarbazone, II, 174.
- 3:4-Ditolylacetic acid**, II, 174.
- Di-*o*-tolylacetone**, II, 422.
- $\alpha$ -Di-*p*-tolylbutane- $\alpha$ -diol diacetate**, II, 13.
- $\alpha$ -Di-*p*-tolyl- $\Delta^6$ -butene- $\alpha$ -diol**, and its diacetate, II, 13.
- $\alpha$ -Di-*p*-tolyl- $\Delta^6$ -butylene- $\alpha$ -diol**, II, 13.
- $\beta$ -Ditolylethylamines**,  $\beta$ -hydroxy-, and their derivatives, II, 87.
- $\alpha$ -3:4-Ditolylethylene glycol**, and its benzoate, II, 174.
- Di-2:3:4-triacetyl- $\beta$ -D-glucosyl carbonate**, di-1-bromo-, II, 302.
- Di-2:3:4-triacetyl- $\beta$ -D-methylglucosidyl carbonate**, II, 302.
- Ditridecylsulphonylethane**, II, 163.
- 4,4'-Di-2':4':6''-triethylbenzoyldiphenyl**, II, 101.
- 4,4'-Di-2':4':6''-trimethylbenzoyldiphenyl**, II, 101.
- Di-(2:4:5-trimethylbenzyl)malonic acid**, di-3:6-dihydroxy-, di-3-acetyl derivative, diethyl ester, II, 255.
- $\alpha$ -Di-(2:2:6-trimethyl- $\Delta^6$ -cyclohexenyl)- $\gamma$ -di-methyl- $\Delta^6$ -decadiene- $\Delta^6$ -di-ene- $\gamma$ -diol**, II, 224.
- $\alpha$ -Di-(2:2:6-trimethyl- $\Delta^6$ -cyclohexenyl)- $\gamma$ -di-methyl- $\Delta^6$ -octadiene- $\Delta^6$ -di-ene- $\gamma$ -diol**, II, 224.
- 4,4'-Di-2':4':6''-triisopropylbenzoyldiphenyl**, II, 101.
- $\alpha$ -Di-2:4:6-triisopropylphenylethane**, and di-bromo-, II, 171.
- Diundecylsulphonylethane**, II, 163.
- Diuresis**, alcohol, in man, III, 820.
- anti-factor for, in pregnancy, III, 694.
- in adrenalectomised rats, III, 888.
- Diuresis**, maximal, production of, with sucrose-Ringer's solution, III, 532.
- water, inhibition of, by emotional stress, effect of pituitary lobe removal on, III, 890.
- Diuretics**, in treatment of oedema, III, 551.
- mercurial, cardiac depression by, III, 551.
- chloride excretion increases after dosage with, in dogs, III, 771.
- in treatment of congestive heart failure, III, 550.
- systemic reactions to, III, 843.
- Di-( $\beta$ -3-uric acid-ethyl) disulphide**, II, 37.
- Diverticulitis**, jejunal, III, 143.
- Divinyl ether**, analysis of, in blood, III, 369.
- Divinyl ether**,  $\alpha$ -amino-, II, 4.
- Divinylene groups**, properties of, effect of substitution on, I, 225.
- Di-( $\beta$ -3-violurylethyl) disulphide**, II, 37.
- Dixanthenomethine**, II, 194.
- Dixanthyleneallene**, II, 194.
- Dizippus***. See *Carassius*.
- Dizziness**, symptoms of, III, 110.
- $\Delta^4$ -Docosadiene- $\lambda$ -diols**, I, 298.
- $\Delta^4$ -Docosadien- $\lambda$ -ol**, I, 298.
- $\Delta^4$ -Docosadien- $\lambda$ -ol- $\mu$ -one**, I, 298.
- $\alpha$ - and  $\beta$ - $\Delta^6$ -Docosadi-inines**,  $\lambda$ -dihydroxy-, II, 393.
- Docosanes**, alkyl-substituted, II, 341.
- Docosane- $\lambda$ -diols**, I, 298.
- n*-Docosylbenzene**, II, 85.
- n*-Docosyldecahydronaphthalene**, II, 85.
- n*-Docosyldiphenyl**, II, 85.
- n*-Docosylcyclohexane**, II, 85.
- n*-Docosylnaphthalene**, II, 85.
- n*-Docosyltetrahydronaphthalene**, II, 85.
- $\Delta^{11:12}$ -Dodecahydroacridine**, II, 116.
- Dodecaminoanilides**, II, 405.
- Dodecane- $\beta$ -dione**, II, 300.
- Dodecane- $\gamma$ -dione**, II, 300.
- Dodecan- $\alpha$ -ol**, arsenite, II, 343.
- n*-Dodecan- $\delta$ -ol**,  $\gamma$ -nitro-, II, 295.
- n*-Dodecan- $\epsilon$ -ol**,  $\delta$ -nitro-, II, 295.
- Dodecinitroanilides**, II, 405.
- Dodecoic acid**,  $\lambda$ -bromo-, and  $\lambda$ -iodo-, and their methyl esters, II, 344.
- $\alpha$ -hydroxy-, *p*-bromophenacyl, *p*-nitrobenzyl, and phenacyl esters, II, 74.
- N*'-Dodecylsulphanilamide**, II, 307.
- Dodecylamine**, acetate, solutions of, I, 58.
- equilibrium of, with water, I, 398.
- hydrochloride, solutions of, I, 97.
- Dodecylamines**, electrical conductivity of solutions of acetates and hydrochlorides of, I, 147.
- 1-Dodecyl- $\Delta^1$ -cyclohexene**, II, 163.
- 2-Dodecyl-3-methyl- $\Delta^2$ -cyclopentenone**, and its semicarbazone, II, 363.
- Dodecylbenzoic acids**,  $\beta$ -*n*-butylaminoethyl esters, hydrochlorides, II, 404.
- 1-Dodecylpicolinium halides**, II, 203.
- Dogfish**. See *Mustelus canis*, and *Squalus acanthias*.
- Dogger**, Yorkshire, I, 251.
- Dolantin**, addicts to, III, 770.
- tolerance to, III, 925.
- Dolerite sill**, Hangnest, S. Africa, I, 346.
- Dolomite**, pseudomorphous after aragonite, I, 346.
- Dolphins**, osmotic regulation of, III, 531.
- Dopa**, renal hypertension produced by, III, 320.
- search for, in protein hydrolysates, III, 821.
- Dosimeter** for standardising radiation dosimeters, III, 639.
- Draconis**, WW, spectrum of, I, 254.
- Dracontiasis**, treatment of, with phenothiazine, III, 924.
- Drainage**, Mikulicz, in relation to post-operative infection, III, 30.
- Drawings**, water-colour, for screen projection, III, 426.
- Drimys winteri***, tannin-resin complex in bark of, III, 863.
- Drinking water**. See under Water.
- Drops**, Hanike-Gibbs recorder for, modified, III, 788.
- Dropsy**, epidemic, mustard oil-argemone oil theory of, III, 712.
- Drosera***, cytoplasmic bodies of, III, 84.
- Drosophila***, chromosomes, salivary gland, staining of, with iron hæmatoxylin, III, 366.
- eye colour development in, III, 82.
- eye size in, III, 82.
- germ cells of, effect on development of dominant lethals induced by X-rays in, III, 431.
- gonads of, germ cell movements and sex differentiation in, III, 82.
- $v^+$  hormone of, identification of, III, 42.
- mutants of, effecting body colour, resistance to desiccation of, III, 189.
- pupæ, dehydrogenase-substrate system of, in metamorphosis, III, 715.
- wing size development in, effect of increasing time of, III, 82.
- Drosophila melanogaster***, bristle development in, III, 791.
- deficiency effects of ultra-violet light in, III, 867.
- eye colour in, effect of diet on, III, 82.
- hormone causing, III, 188.
- female, semi-sterility in, autosomal factor inducing, III, 659.
- phenotype in, development of, III, 728.
- polygenic combinations in balance of, III, 432.
- sex-linked mutations of, induced by neutron radiations from cyclotron, III, 364.
- wings, genotypic and phenotypic, flight capacity in relation to, III, 728.
- Drosophila pseudo-obscura***, chromosomes of, X-ray induced changes in, III, 867.
- temperature and "sex-ratio" in, III, 432.
- Drugs**, action of, on coronary vessel calibre, III, 841.
- on enzyme action, III, 935.
- on insect nervous system, III, 107.
- on intact skin, III, 338.
- addicts to, III, 770.
- anti-convulsant, technique for, in cats, III, 51.
- autonomic, skin test by, with electrophoresis, III, 928.
- Chinese, vitamin-E assay tested on, III, 339.
- eruptions from, III, 53, 844.
- excessive use of, in relation to mental disease, III, 844.
- Mexican, III, 55.
- therapeutics of, III, 55.
- vasodilator, evaluation of iontophoresis using, for rheumatoid arthritis treatment, III, 637.
- with nicotine-like action, sweat response to, III, 50.
- Ducks**, age susceptibility of, to Rous sarcoma virus, III, 697.
- egg-laying of, as enforced relaxation oscillation, III, 310.
- Ducts**, cystic, absence of, congenital, III, 430.
- Müllerian. See Müllerian duct.
- Wolfian. See Wolffian duct.
- Ductus arteriosus**, closure of, anatomy of, III, 802.
- in human foetus and newborn infant, III, 429.
- patent, blood cultures from pulmonary artery and aorta in, III, 802.
- ligation of, III, 440.
- ligation and chemotherapy of, III, 295.
- Ductus venosus**, closure of, mechanism of, III, 667.
- Duhem-Margules law**, derivation of, I, 331.
- Dulcin**, determination of, II, 44.
- Dulcitol  $\beta$ -dibenzoate  $\alpha$ - $\delta$ -tetraacetate**, II, 162.
- $\beta$ -dibenzylidene ether, II, 162.
- Dunacaine**, anaesthesia with. See under Anaesthesia.
- "Dunsiekte."** See Liver diseases; cirrhosis.
- Duodenum**, atresia of, isolated segment of intestine associated with, III, 607.
- contents of, acidity and neutralising ability of, effect of cream on, in dogs, III, 815.
- determination in, of trypsin, III, 692.
- lipolytic analysis of, III, 817.
- reaction and neutralising ability of, in dogs on Ewald meal, III, 753.
- hæmorrhage from, treatment of, III, 894.
- intubation of, III, 393.
- mucosa of, lipins of, in swine during fat absorption, III, 456.
- syphilis of, III, 241.
- ulcers of. See under Ulcers.

Durand's disease, virus infection in, III, 943.  
 Durangite, synthesis of, I, 124.  
*n*- and *iso*-Duriis, and their derivatives, II, 90.  
*n*- and *iso*-Duroins, and their acetates, II, 90, 91.  
 Duroquinol dimethyl ether, II, 235.  
 Durylactic acids, and their amides, II, 92.  
 Durylacetoimesitylenes, II, 92.  
 Durylacetonitrile, II, 92.  
*iso*Durylacetonitrile, II, 92.  
 $\beta$ -*iso*Durylaldehyde cyanohydrin, reaction of, with magnesium phenyl bromide, II, 407.  
*iso*Durylic acid, allyl ester, II, 142.  
 $\beta$ -*iso*Durylic acid, benzyl ester, II, 142.  
 Duryl  $\alpha$ -mesitylvinyl ketones, II, 92.  
 Dusser de Barenne, J. G., III, 587.  
 Dust or Dusts, effect of, on lung tumours in mice, III, 758.  
   house, allergens from, III, 721.  
   pulmonary, silicic esters in, III, 845.  
   sampling of, microprojection screen for, III, 360.  
 Dwarfs, pituitary and non-pituitary, treatment of, with growth hormones, III, 310.  
 Dwarfism, clinical aspects of, III, 789.  
   diabetic, III, 687.  
   pituitary, with atrophic rhinitis, III, 27.  
 Dyes, adsorbed, chemiluminescence of, I, 352.  
   adsorption of, by copper powder, I, 235.  
   anticarcinogenic, effect of, on liver tumour incidence, III, 463.  
   classification of, by resonance, II, 238.  
   determination of, I, 247.  
   *NN'*-dialkyl-2,2'-dipyrazoleanthronyl, II, 205.  
   isomeric, adsorption of, by growing cupric acetate crystals, I, 94.  
   mordant, metallic compounds with, I, 248.  
   organic, quantum theory of, I, 45, 229.  
   phosphorescence of, I, 82.  
   quinone, of phenanthrofurane series, II, 375.  
   sensitive to copper ions, I, 376.  
   soluble, adsorption of, by gelatin, I, 171.  
   solutions, depolarisation of fluorescence of, I, 7.  
   spectra of, absorption, and constitution, II, 8, 89.  
   spectrophotometric absorption curves of, I, 256.  
   vital, chlorazol black E as, III, 190.  
 Dynamos, and electrochemistry, I, 251.  
 Dysentery, amoebic, treatment of, III, 261.  
   bacillary, in children, III, 940.  
   treatment of, with serum, III, 769.  
   with sulphaguanidine, III, 706.  
   with sulphanilylbenzamide, III, 259.  
   with sulphapyridine, III, 259.  
   bacilli of. See under Bacilli.  
   treatment of, with sulphaguanidine, III, 627.  
 Dysgerminoma, complicating pregnancy, with malignant secondary deposits, III, 892.  
 Dysmenorrhœa, ovarian, aetiology, diagnosis, and treatment of, III, 140.  
   treatment of, with anhydrohydroxyprogesterone, III, 603.  
 Dysostosis multiplex, III, 676.  
 Dyspepsia, gall-bladder, III, 610.  
 Dysphagia, post-cricoid web in, radiology of, III, 691.  
 Dysplasia, ectodermal and mesodermal, with osseous involvement, III, 361.  
 Dysprosium, radioactive, I, 256.  
 Dysprosium determination—  
   determination of, spectrophotometrically, I, 278.  
 Dystonia, periodic, III, 804.  
 Dytiscus, eye of, retinal and optic ganglion response in, III, 591.

## E.

Ears, acoustic trauma in, in man, III, 227.  
   central nervous system and, III, 303.  
   cochlea of, atrophic degeneration of, in syphilitic gumma of medulla oblongata, III, 226.  
   electrical phenomena of, in man, III, 226.  
   mechanics of, III, 682.  
   resonance in, III, 682.

Ears, Corti's organ of, lesions of, effect of, on cochlear potentials, III, 683.  
   diseases of, vestibular tests on, clinical application of, III, 683.  
   effect of flying on, III, 226, 303, 591.  
   external, tumours of, induced by ultra-violet rays, in mice, III, 398.  
   halistheresis in, reversal of, in mammals, III, 226.  
   in aviation and warfare, III, 226.  
   infections of, treatment of, with sulphanilamide, III, 682.  
   internal, central nervous system and, III, 303.  
   in relation to tonal dip, III, 592.  
   melanosis of, III, 520.  
   labyrinth, osseous, effect of avitaminosis on, III, 807.  
   middle, deafness in, progressive, III, 682.  
   embryological development of, in field mouse, III, 25.  
   pressure of, effect of, on distortion, III, 449.  
   neurofibromas of, produced by crude ergot feeding in rats, III, 613.  
   sound conduction in, cinematography of, in man, III, 449.  
   veins of, aid to injection of, in rabbits, III, 203.  
   vitamins and, III, 221, 225.  
   See also Audition and Hearing.  
 Earth, the, thermal state of, I, 121.  
 Earths, fuller's, adsorption of phenols on, I, 295.  
   Japanese acid, II, 174.  
   catalytic action of, II, 55.  
   rare, acetates, electrolysis of, I, 178.  
   chlorides and iodides, heats of solution and formation of, I, 299.  
   metals, alloys of, with mercury, I, 335, 373.  
   determination in, of europium and ytterbium, I, 114.  
   determination of, in mixtures, I, 154.  
   heats of solution of, I, 299.  
   separation of, by their amalgams, I, 307.  
   spectra of, emission, I, 190.  
   thermochemistry of, I, 299.  
   salts, anticoagulant effect of injection of, in man and rabbits, III, 798.  
 Earthworms. See under Worms.  
 Eberthella typhi, *H* antigens of, effect of bacteriophages on, III, 495.  
 Eberthella typhosa, antigen from, effect of, on leucocytes of guinea-pigs, III, 495.  
   vi agglutination by, III, 783.  
 dl-Ecgonic acid, synthesis of, II, 426.  
 Echinochrome, dehydrogenation of, by hydrogen peroxide and peroxidase, II, 320.  
 Echinoderms, bilateral symmetry of, in chemical concentration gradients, III, 659.  
   cross-fertilisation of, III, 748.  
   pigments of, III, 756.  
 Echinometra subangularis, spermatozoa of, activity-preventing substance from, III, 82.  
 Eclampsia, III, 236.  
   anatomio-pathological changes in, III, 820.  
   blood in, effect of, on kidney and liver of rabbits, III, 313.  
   cerebral dysrhythmia in relation to, III, 806.  
   endocrine imbalance of, III, 388.  
   late post-partum, III, 313.  
   plasma-uric acid and -urea in, III, 293.  
   treatment of, with oxygen, III, 671.  
   uric acid in, and pre-eclampsia, blood-lactic acid and -acetone bodies in relation to, III, 370.  
 Ectopia cordis, III, 577.  
 Eczema, facial, feeding on pasture extracts in, III, 787.  
   in children and infants, III, 499.  
   infantile, control of, with cereal-free diet and soya-bean emulsion, III, 784.  
   treatment of, with potassium chloride and its effect on serum-potassium, III, 710.  
   nummular, treatment of, with vitamin-A, III, 327.  
   pigmented, with macrocytic anæmia, III, 288.  
   sensitisation in, of negroes and whites, III, 652.  
   sensitivity of patients with, to dander extracts, III, 499.  
   treatment of, with lard, III, 332.  
 Edestan, denaturation of, II, 276.

Edestin, hydrolysis products of, mol. wt. of, II, 337.  
 Elworms, death determination in, III, 425.  
 Effluents, coloured, determination in, of alkalis, sulphates, nitrates, and phosphates, I, 184.  
 Eggs, cod, effect of temperature on, III, 4.  
   grasshopper, esterases in, III, 659.  
   protyrosinase in, III, 659.  
   hatchability of, density in relation to, III, 34.  
   hatching, production of, supplements for soya-bean oil meal in rations for, III, 404.  
   hen's, analysis of, spectrochemically, III, 453.  
   cleavage stages of, photography for, III, 570.  
   conductivity and dielectric effect of, III, 57.  
   distribution in, of avidin and biotin, III, 621.  
   double-yolked, production of, III, 385.  
   shell thickness of, effect of air temperature on, III, 385.  
   incubation of, inositol form changes during, III, 811.  
   polar spindles in, effect on, of centrifuging, III, 5.  
   sea-urchin's, cyanide-stable respiration of, III, 474.  
   development of, chemistry of, III, 810.  
   effect of sulphanilamide on, III, 768.  
   effect of lysoceitin on, III, 791.  
   lipin content changes in, during development, III, 811.  
   silkworms, effect of moisture on, during winter storage, III, 232.  
   vitamin content of, effect of incubation on, III, 890.  
   See also Ova.  
 Egg-shells, bird's, protoporphyrin in, III, 901.  
 Egg-white, antibiotic factor from, III, 407.  
   injury from, due to biotin inactivation, III, 156.  
   treatment of, with biotin in man, III, 701.  
 Egg-yolk, formation in, of phosphorus compounds, III, 543.  
 "Egonite," identity of sterrittite and, I, 122.  
 Eicosane- $\alpha\beta$ -diol, and its derivatives, II, 296.  
 Eimeria tenella, infections with, hæmorrhage control in, in vitamin-K protected chicks, III, 369.  
 Einstein functions, table of, I, 350.  
 Ekatanalium,  $\beta$ -ray spectrum of, I, 383.  
 Ekdemite, formula and grouping of, I, 380.  
   structure of X-ray, I, 355.  
 $\beta$ -Elaeostearic acid, preparation of, II, 130.  
 Elasticity, rubber-like, I, 260, 397.  
 Elastoidin fibres, physical properties of, I, 397.  
 Electrets, field of, in presence of gaseous ions, I, 165.  
 Electric arc, carbon, brightness of positive crater of, I, 49.  
   high-current, chemistry of, I, 192.  
   radiation from, I, 253.  
   cathode drop of, I, 3.  
   copper, radiation temperature in, I, 185, 186.  
   magnetic control of, in spectrochemical analysis, I, 117.  
 discharge, chemical action of, I, 303, 371, 403.  
   corona, point-to-plane, pulses in, I, 126.  
   electrodeless, in mercury, I, 349.  
   glow, anode fall in, I, 3.  
   energy distribution among cathode rays of, I, 161.  
   in gases, current density at cathode in, I, 311.  
   reactions in, I, 208.  
   in gases, I, 2, 191.  
   at low pressure, I, 78.  
   plasma, non-stationary states of, I, 3.  
   reactions in, I, 273.  
   tubes, electrets in, I, 165.  
   reversible, I, 213.  
 fields, in interstellar space, I, 129.  
 induction accelerator generating 20 Mc.v., I, 186.  
 moment of inorganic halides in dioxan, I, 234.  
 rectification, two-valve half-wave, effect on, of shockproof cables, III, 56.  
 rectifiers, selenium, effect of temperature on resistance of, I, 28.  
 shock, effect of, on blood-pyruvate, -lactate, and -glucose, III, 293.



- Electric shock, treatment with, III, 447.  
current control in, III, 845.  
electrical properties of tissues in, III, 845.  
of mental disorders, III, 447, 884.  
of psychoses, III, 447.
- Electrical conductivity, laboratory apparatus for, I, 215.  
of amorphous and crystalline substances, I, 12.  
of biological liquids, III, 774.  
conductors, semi-, ionic, conductivity of, I, 8.  
contact between solids, I, 229.  
double layer, structure and capacity of, I, 265.  
theory of, I, 96.  
resistance, determination of, I, 118.  
units, nomenclature of, I, 167.
- Electroaudiography, III, 683.
- Electrocapillarity, thermodynamics of, I, 396.
- Electrocapillary curves, in liquid ammonia, I, 94.
- Electrocardiograms, III, 295.  
after pulmonary artery occlusion in man, III, 578.  
boy's, analysis of, III, 201.  
changes in, in jaundice in man, III, 578.  
congenital heart disease and, III, 201.  
distribution of potential in, III, 733.  
effect on, of morphine in man, III, 925.  
human, effect of drugs and exercise on, III, 800.  
hypertension, production and anatomical explanation of, III, 670.  
in cardiazol therapy, III, 877.  
in prognosis of heart disease, III, 877.  
nature of QI and QIII of, III, 733.  
of newborn, effect on, of lowered atmospheric pressure, III, 206.  
short P-R interval with prolonged QRS complex in, III, 577.  
vector-, human, basic form of, III, 201.
- Electrocardiograph, anagrams of, III, 734.  
changes in, after hæmatemesis in peptic ulcer, III, 439.  
after pulmonary artery compression, III, 666.  
in pancreatitis, III, 666.  
in pericardial calcification, III, 201.  
P-wave in CF<sub>2</sub> lead in, after spontaneous pneumothorax, III, 372.
- Electrocardiography, use increase of, in hospitals, III, 439.
- Electrocortigram, human, III, 517.
- Electrodes, bipolar, III, 502.  
dropping mercury. See under Cathodes.  
economical use of, I, 342.  
glass, effect of chemical durability of glass on, I, 24.  
graphite, shaping lathe for, I, 75.  
high-resistance, electronic voltmeters for, I, 117.  
hydrogen, I, 331.  
platinised porous graphite as, I, 64.  
iron-iron oxide, for acid-base potentiometry and hydrogen-ion measurements, I, 378.  
lead amalgam-lead fluoride, I, 65.  
mercurous chloride, I, 213.  
mercurous chloride-hydrochloric acid, I, 331.  
mercurous sulphate, I, 331.  
micro-, of rotating platinum wire, titrations with, I, 75.  
platinum wire, voltammetry with, I, 65.  
noble metal, potential of, in *Bacillus coli* cultures, III, 557.  
passivity of, I, 268.  
platinum, for analysis, I, 411.  
polarisation of, I, 157.  
silicon carbide, I, 65.  
silver-silver bromide, I, 100.  
potential of, in methyl alcohol, I, 241.  
silver-silver chloride, I, 100.  
potential of, in ethyl alcohol-water mixtures, I, 300.  
working, automatic control of potential of, I, 157.  
ytterbic-ytterbous ion, potential of, I, 300.
- Electro-encephalograms, abnormal, diagnosis of, III, 740, 883.  
diagnostic and prognostic value of, III, 883.  
effect on, of cardiazol injections, III, 883.
- Electro-encephalograms, effect on, of hypoglycæmia, III, 739.  
of reduced atmospheric pressures, III, 674.  
human, cycloscopy of, III, 517.  
in acute head injuries, III, 740.  
in chronic post-traumatic states, III, 740.  
in electrically induced convulsions in rabbits, III, 585.  
slow activity in, blood-sugar level and effect of hyperventilation on, III, 883.  
α-waves in, in healthy children, III, 883.
- Electro-encephalograph, III, 863.
- Electro-encephalography, changes in, induced by sodium amylal injection, III, 806.
- Electrolysis, action of electric field at surface of electrolytes in, I, 267.  
laboratory apparatus for, I, 215.
- Electrolytes, adsorption of, by charcoal, I, 94.  
aqueous, repulsive forces in wetting films of, I, 95.  
bi-univalent, thermodynamics of, I, 298.  
body-fluid. See under Body fluids.  
colloidal adsorption by, in relation to Gibbs adsorption isotherm, I, 295.  
extracellular, loss of, electrolyte and water exchange between muscle and plasma of dog after, III, 916.  
filtration of solutions of, through collodion membranes, I, 96.  
in cerebrospinal fluid, distribution of, III, 111.  
in serum. See under Blood-serum.  
inorganic, electro-capillary curves of, in liquid ammonia, I, 94.  
"internal friction Wien effect" in, I, 16.  
molar volumes of, in aqueous solution, I, 51.  
renal excretion of, effect of adrenal cortical hormone on, in rats, III, 888.  
strong, activity coefficients and concentration of, I, 328.  
dielectric constants of solutions of, I, 92.  
viscosity of solutions of mixtures of, I, 52.  
surface tension and concentration of solutions of, I, 142.  
tissue-. See under Tissues.  
ultrafiltrates from, I, 142.  
uni-univalent, compressibility of solutions of, I, 141.
- Electrolytic conductivity in presence of hydrogen peroxide, I, 240.  
oxidation. See under Oxidation.  
reduction. See under Reduction.
- Electrometer, thermionic, I, 340.
- Electromyogram, relation between mechano-gram and, in muscle contractions, III, 298.
- Electrons, Avogadro number and charge of, I, 2.  
charge on, I, 2.  
cosmic-ray, low-energy, in atmosphere, I, 287.  
diffraction of, by single crystals, I, 291.  
habit and orientation in, I, 391.  
in thin films, I, 47, 260.  
electrostatic cylindrical lenses for, I, 2.  
emission of, by metals, I, 255.  
energy levels of, in biochemistry, III, 57.  
equivalent, configuration of, I, 253.  
fast, scattering of, I, 162, 254.  
forces on, I, 130.  
free, in gases, mobilities of, I, 381.  
gram, I, 191.  
photographic action of, I, 373.  
polarisation of, I, 222.  
retardation of, by X-rays, I, 254.  
secondary, energy distribution of, I, 30.  
showers produced by, and by photons, I, 223.  
space-charge effects in velocity-modulated beams of, I, 161.  
valency, reaction between, and the splitting rule, I, 317.  
vibratory, in electrostatics, I, 311.  
volume of, and compressibility, I, 256.  
work of removal of, I, 350.
- β-Electrons, density distribution and energy spectrum of, I, 44.
- Electron gas. See Gas electron.
- Electron microscope. See under Microscopes.
- Electron tube recorder, III, 656.
- Electronic relays, I, 186, 342.
- Electronic timer, I, 342.
- Electrophoresis, micro-, pyrex cell for, I, 118.
- Electro-physiology, semi-conductors in, I, 300.
- Electrostatic shields, colloidal graphite as, I, 280.
- Electrostethogram, III, 18.
- Electrotor, particle counting by, I, 412.
- n- and iso-α-Elemanic acids, and their methyl esters, II, 418.
- Element No. 93, isolation of, and its properties, I, 374.  
separation of, I, 256.
- Elements, beyond oxygen, excited states of nuclei of, I, 383.  
classification of, by Gibbes, I, 283.  
determination of, with flame and spark spectra, I, 154.  
β-disintegration of, I, 32.  
half-lives of, I, 256.  
fourth-period, co-precipitation of, with barium sulphate, I, 154.  
Group V, stability of compounds of, I, 190.  
heavy, cascade showers in, I, 35.  
disintegration of, by deuterons, I, 383.  
in stars, I, 125.  
intermediate, excitation functions of, I, 382.  
isotopes and nuclei of, I, 255.  
light, cosmic abundance of, I, 29.  
spectra of, nuclear, I, 32.  
liquid, atomic distribution in, I, 259.  
metallic and non-metallic, deficiency of, pathology of, III, 906.  
native, classification of, and their sulphides and sulpho-salts, I, 344.  
packing fraction-at. number curve of, I, 382.  
radioactive, amounts of, in non-equilibrium systems, I, 286.  
elimination of, after thorotrast injection, III, 476.  
in ocean Red Clay, I, 120.  
separation of, I, 306.  
spark patterns of, I, 139.  
spectra of, X-ray, I, 1.  
spark, I, 125.  
standard electrode potentials of, I, 268.  
transition, magnetic behaviour of compounds of, I, 261.  
transmutation of, I, 373.  
valency of, formulæ for, I, 196.  
wide-angle interference with rays from, I, 42.
- β-Elementic acid, and its acetate, II, 267.
- β-Elementic acid, II, 266.
- Elephantulus, eggs and embryos of, III, 3.
- menstrual cycle in, III, 235.  
ovulation and corpus luteum formation in, III, 129.
- Elliptone, m.p. of, II, 111.
- Elm trees, wilt diseases of fungal spore distribution of, III, 786.
- Elodea, respiration of, III, 652.
- Embalming, dehydration in specimens exposed to air after, III, 790.
- Embelia robusta*, active principles of, III, 787.
- Embolism, air, in artificial pneumothorax, III, 671.  
cerebral, in mitral stenosis, III, 512.  
coronary, in bacterial endocarditis, III, 877.  
fat-, pulmonary, III, 579.  
pulmonary, due to liver tissue, III, 442.  
heart disease and, III, 96.  
in beriberi heart disease, III, 878.  
maternal, from amniotic fluid, III, 668.
- Embryos, amphibian, densities of, with reference to mechanism of organiser action, III, 790.  
form and behaviour development in, III, 567.  
biotin distribution in, III, 903.  
bovine, auriculo-ventricular node development in, III, 80.  
bundle of His development in, III, 80.  
chick, cyclopic, brain of, III, 187.  
cytochrome oxidase in, III, 934.  
hypophysectomy in, III, 4.  
infection of, with gonococci, III, 647.  
nerve ganglion in occipital region of, III, 430.  
neural plate and tube of, ultrastructure of, III, 726.

- Embryos**, chick, oxygen consumption of, at different stages, III, 659.  
 persistence of cells of, in tissue cultures, III, 650.  
 respiration of, III, 141.  
 sensitising action of, III, 784.  
 shell-calcium utilisation by, in relation to sex, III, 141.  
 sterile, removal of, from eggs, apparatus for, III, 866.  
 toxicity of antiseptics for, III, 867.  
 development in, in relation to superfetation in rats, III, 866.  
 frog, thermal isolation of animal hemisphere of, III, 726.  
 human, in primitive streak stage, III, 282.  
 maternal circulation of, III, 187.  
 presumptive, III, 282.  
 implantation of, III, 186.  
 limb rudiments in, extirpated, growth and polarisation of cells replacing, III, 81.  
 macaque, development of, III, 283.  
 mouse, development of, in extraembryonic celom of chick, III, 430.  
 salmon and trout, heart beat of, III, 294.  
 sexual development in, effect of sex hormones on, in rats, III, 812.  
 tissues of, X-ray analysis of, III, 4.  
 See also Ova.
- Embryology**, diencephalon position in, III, 362.
- Embryoma**, kidney. See Tumours, Wilms'.
- transplantable, in mice, III, 37.
- Emetine hydrochloride**, dermatitis from, III, 721.
- Emmet, J. P.**, notebooks of, I, 215.
- Emotions**, and bodily reactions, III, 448.
- Empyema**, bullous, after pneumonia, III, 103.  
 subcutaneous, complicating labour, and its cause, III, 238.
- Emulsin**, II, 133.  
 almond, effect of, on phenyl-2:4:6-trimethyl- $\alpha$ -D-glucoside and populin, III, 641.
- Emulsions**, antiseptic. See under Antiseptics.  
 light scattering in, I, 316.  
 of viscous materials, viscosity and concentration of, I, 296.  
 theory of, I, 56.
- Encephalitis**, aetiology and treatment of, in Minnesota and North Dakota, III, 177.  
 arsenical, fatal, from syphilis treatment during pregnancy, III, 925.  
 post-vaccinal, treatment of, III, 928.  
 St. Louis and Western equine, in sera of birds and mammals, III, 720.  
 virus, antibodies against, III, 496.  
 St. Louis, virulence of, III, 856.  
 St. Louis and Western equine, antibodies against, III, 496.
- Encephalitis lethargica**, treatment of, with benzedrine sulphate, III, 377.
- Encephalometry**, III, 83.
- Encephalomyelitis**, after measles and post-vaccinal, III, 353.
- Eastern, equine, virus**, effect on, of irradiation, III, 68.  
 westward spread of, III, 352.
- equine**, neutralisation of, by antibodies in human serum, III, 943.
- fetal**, 560.  
 infection with, components of chick embryo after, III, 783.  
 toxoplasmic, III, 587.  
 virus, concentration of, III, 856.  
 inhomogeneity of, III, 178.
- Encephalopathy**, after neosalvarsan, III, 843.  
 lead, III, 167.  
 pancreatic, III, 675.  
 subcortical. See Schilder's disease.
- Endameba histolytica**, effect of dyes on, III, 60.
- Endive**, growth of tissue cultures of, III, 562.
- Endocarditis**, bacterial, chemotherapy in, III, 627.  
 coronary embolism in, III, 877.  
 effect of sulphonamides on, III, 160.  
 subacute, III, 493.  
 heterogenetic antibodies in, III, 495.  
 treatment of, with heparin and sulphonamides, III, 663, 919.  
 with protosil, III, 545.
- Endocarditis**, bacterial, treatment of, with sulphamethylthiazole, neuritis after, III, 480.  
 with sulphanilamide, III, 627.  
 with sulphapyridine, III, 47.  
 with sulphapyridine, sulphathiazole, and sulphonamide, III, 410.  
 meningococcal, recovery from, after anaphylactic shock, III, 941.  
 treatment of, with sulphonamides, III, 839.  
 pneumococcal, treatment of, with sulphonamides, III, 767.
- Endocardium**, elastic tissue, hyperplasia of, III, 578.
- Endoconidiophora adiposa**, lignosulphonate decomposition by, III, 343.
- Endocrines**. See under Glands.
- Endocrinology**, in gynaecology, III, 453.  
 in U.S.A., III, 592.
- Endometrioma interstitialis**, III, 235.
- Endometriosis**, of left cardinal ligament, simulating cervical carcinoma, III, 467.  
 stromal, benign and malignant, III, 536.  
 vaginal, pregnancy and, III, 137.
- Endometritis**, hyperplastic, effect of, on blood cytology in dogs, III, 510.
- Endometrium**, effect on, of deoxycorticosterone in monkeys, III, 140.  
 of stilboestrol and other oestrogens, in castrated guinea-pigs, III, 232.  
 fat distribution in, after oestradiol and progesterone treatment, in castrate rabbits, III, 750.  
 glycogen in, III, 814.  
 human, lipins in, during menstrual cycle and pregnancy, III, 235.  
 lipins in, cyclic changes in, in monkeys, III, 140.  
 nerves of. See under Nerves.  
 progesterone-like effect of ascorbic acid on, III, 135.  
 responses of, and basal metabolic rates, III, 391.  
 transplants of, intraocular, menstruation in, in monkeys, III, 138.
- Endothelioma**, of heart, III, 467.
- Endotoxins**, III, 946.
- Enediols**, II, 90, 91.
- Enemas**, rectum injury due to improperly administered, III, 144.
- Energy**, binding, of atoms, calculation of, I, 85.  
 high-frequency, losses of, in solutions containing macro-molecules, I, 58.  
 intermolecular, determination of, I, 197.  
 of solid surfaces, I, 325.  
 rotation-vibration, of planar ZXY<sub>2</sub> molecules, I, 385.
- Enterectomy**, effect of, on lymphocytes, III, 89.  
 gastric secretion in, in dogs, III, 240.
- Enteritis**, infectious, treatment of, with sulphaguanidine, in swine, III, 920.  
 regional, prognosis of, III, 607.
- Enterobius vermicularis**, infestation with, treatment of, with gentian-violet and hexylresorcinol, III, 841.  
 with phenothiazine, III, 631.
- Enterococci**, action on, of penicillin, III, 344.
- "Enterogastric regurgitation"**, mechanism of, III, 241.
- Enterogastrone**, III, 392.  
 treatment with, of gastrojejunal ulcers, III, 816.
- Enteropneusta**, nervous system of, III, 376.
- Enterotoxaemia**, infectious, in sheep in Western Australia, III, 769.
- Entonon**, effect of, on cardiac output, III, 201.
- Entropy** of vapourisation of liquids, I, 233.
- Enuresis**, in adolescents, drugs in, III, 532.
- Enzymes**, III, 777.  
 activation of, by metals, III, 848.  
 activity of, in normal and cancerous liver, III, 150.  
 concentration of, III, 934.  
 haemopoietic, of gastric mucosa, nature of, III, 795.  
 hydrolysis by, protection against by phosphates, III, 348.  
 in blood. See under Blood.  
 in ontogenesis, III, 284, 777, 791.
- Enzymes**, inactivation of, by oxidation, III, 172.  
 metabolism of. See under Metabolism.  
 mucin-hydrolysing, III, 641.  
 oestron-activating. See Oestrinase.  
 of cereals, III, 265.  
 oxidation by, of unsaturated fatty acids, II, 73.  
 Pasteur, spectrum of, absorption, III, 172.  
 proteolysis by, III, 847.  
 polarographic proof of, III, 419.  
 proteolytic, determination of, III, 59.  
 of animal tissues, III, 342, 777.  
 serum-. See under Blood-serum.  
 sex hormones and, III, 341.  
 tumour. See under Tumours.
- Enzyme action**, effect on, of chemotherapeutics and pharmaceuticals, III, 935.  
 of deuterium, III, 715.  
 of deuterium oxide, III, 776.  
 inhibition of, III, 172.  
 on double bonds, III, 716.
- Eosin-methylene-blue agar**, action of, on enteric bacilli, III, 492.
- Eosinates**, spectra and staining capacity of, III, 570.
- Eosinophilia**, effect on, of histamine, in allergic cases, III, 196.  
 familial, III, 11.
- Eötvös rule**, surface tension, co-ordination number, and, I, 396.
- Ependyma**, growth of, III, 111.
- Ephedrine**, effect of, and adrenaline and prostigmine on muscle, III, 804.  
 treatment with, of myasthenia gravis, III, 881.
- Epichlorohydrin**, reaction of, with Grignard reagents, II, 214.
- Epidermis**, cancer of, development of, from methylcholanthrene, III, 613, 767.  
 hyperplastic, benign, comparison of, with methylcholanthrene hyperplastic epidermis in healing wounds, III, 533.  
 isolated, chemistry and physiology of, and separation of dermis from epidermis, III, 697.  
 pigment cell migration in, in mice, III, 6.  
 rat's, on fat-free diet, III, 43.  
 See also Skin.
- Epiglottitis**, suffocatory position of, III, 25.
- Epilepsy**, after sulphathiazole application to brain, III, 806.  
 autonomic disturbances and, III, 301.  
 blood in, oxygen saturation in, III, 110.  
 cerebral electrical discharges in, effect of choline-like substances on, III, 739.  
 classification of, electro-encephalographically, III, 215.  
 cortical frequency spectrum in, III, 216.  
 development of, late, after carbon monoxide poisoning, III, 18.  
 dulness in, III, 215.  
 experimental, effect on, of sodium diphenylhydantoinate, III, 672.  
 in fronto-thalamic lesions, III, 18.  
 induction of, by cardiazol, III, 20.  
 insulin hypoglycaemia in, III, 110.  
 pathological anatomy of, III, 301.  
 temporo-occipital, Jacksonian, III, 17.  
 treatment of, regulated by synchronised respiration and brain wave recording, III, 377.  
 with dilantil sodium, III, 550.  
 with luminal, III, 412.
- Epinephrine**. See Adrenaline.
- Epiphyses**, closure of, X-ray treatment for, III, 281.  
 effect on, of adrenal and pituitary removal, in rats, III, 361.  
 See also Bone and Cartilage.
- Epithelioma**, Brown-Pearce, effect of X-rays on blood vessels of repair tissue and, in rabbits, III, 825.  
 rabbit, mitotic activity of, effect of colchicine on, III, 534.  
 chorion, ectopic, with corpus luteum cysts of both ovaries, III, 314.  
 malignant, with metastases in lung and brain, III, 314.  
 due to arsenic, III, 324.  
 respiration of, in man, III, 904.

- Epithelium**, cells, ciliated, micro-dissection of, III, 190.  
epidermal, from human skin, III, 286.  
uterine, metaplasia of, produced by oestrin administration in rats, III, 311.
- 2:3-Epoxy-2:3-dihydroindole**, *mono-* and *tri-chloro-*, II, 269.
- 1:3-Epoxy-1:3-diphenyl-2:2-dimethylhydrindene**, II, 146.
- dl*- $\beta$ -Epoxy- $\Delta^7$ -heptene- $\gamma$ -carboxylic acid-*b*, and its derivatives, II, 248.**
- 8:9-Epoxyperinaphthan-7-one**, II, 262.
- $\alpha\beta$ -Epoxypropioveratrone**, and its 2:4-dinitrophenylhydrazones, II, 144.
- 1 $\alpha$ -Epoxy-2:2:4:6-tetramethyl- $\Delta^{3:5}$ -cyclohexadienylacetic acid**, ethyl ester, II, 175.
- Epoxy-2:2:4:6-tetramethylcyclohexenylacetic acid**, ethyl ester, II, 175.
- 2:3-Epoxy-1:2:3-triphenylindole**, II, 423.
- Equations**, boundary layer, solution of, I, 168.  
for calculation of viscosity number, I, 364.  
for reactions between ions and dipolar molecules, I, 400.
- Schrödinger**, solution of, by least-squares method, I, 256.
- Thomson**, verification of, I, 89.
- Equation of state**, I, 357.  
for gas mixtures, I, 90.
- Equilenin**, homologues of, II, 104.
- Equilibrium**, chemical kinetics and, I, 369.  
effect of concentration on, I, 207.  
heterogeneous, symbols for, I, 393.  
in partly-miscible liquids, I, 329.  
liquid-vapour, of non-ideal solutions, I, 329.  
membrane, I, 361.  
two-dimensional, I, 331.
- Equilibrium constants of gas reactions**, I, 239.
- Equisetum arvense***, nicotine from, II, 291.
- Erbium**, spectrum of, arc, I, 349.
- Erbium determination** :—  
determination of, spectrophotometrically, I, 278.
- Erethizon dorsatum***, prenatal development of pancreatic and extra-hepatic ducts in, III, 187.
- Eretomochelys squamosa***, diencephalic nuclei and fibre paths in, III, 109.
- Ergometrine**, intravenous use of, in labour, III, 550.  
separation of, II, 120.  
uterine response to, effect of oestrone and stilboestrol on, in rabbits, III, 634.
- Ergonovine**. See **Ergometrine**.
- Ergotamine**, action of, on dilator iridis, III, 840.
- Ergotism**, acute, III, 637.
- Ericaceae***, arbutin in, III, 182.
- Erisiphe polygoni***, germination and development of conidia of, III, 343.
- Erucic acid**, preparation of, and its oxidation, II, 347.
- Eruptions**, due to drugs, III, 53, 844.  
due to sulphaguanidine, III, 628.
- Erwinia amylovora***, growth of, in relation to nectar concentration, III, 645.
- Erysipelas**, treatment of, with sulphanilamide, III, 919.  
with sulphonamides, III, 707.
- Erysonine**, isolation of, II, 120.
- Erythema**, dosage of X-rays for, III, 339, 714.
- Erythema nodosum**, radiology of, III, 736.
- Erythema palmare**, *nævus-araneus*-like telangiectases and, III, 205.
- Erythrin**, constitution of, II, 405.
- Erythrina* alkaloids**, II, 120, 275.
- Erythritan dinitrate**, II, 215.
- Erythritol dinitrate**, II, 216.
- Erythroblastosis foetalis**, due to Rh-factor in blood, III, 870.  
pathogenesis of, III, 367.  
showing hepatic cirrhosis in macerated foetus, III, 435.
- Erythrocytosis**, effect of, and its relation to shock, III, 10.
- $\beta$ -Erythroidine hydrochloride**, psychophysiological action of, III, 883.
- use of, in cardiacal therapy**, III, 20.
- Erythrophleum coumunga***, alkaloids, II, 121, 210.
- Erythrophleum coumunga***, alkaloid from, II, 210.
- Erythropeiosis**, effect on, of liver extracts, in chick embryo, III, 870.
- Erythrotrichia**, deficiency symptom in black rat, III, 907.
- Erythrozyllon coca***, seeds, ecgonidine methyl ester from, II, 38.
- Erythrozyllon novogranatense***, seeds, ecgonidine methyl ester from, II, 38.
- Eryz johnii***, caudal vertebrae of, III, 185.
- Escherichia coli***, activity against, of sulphonamides, III, 47.  
antagonism between methionine and sulphonamides on, III, 477.  
differentiation of, III, 63.  
enzymic activity and growth of, and  $p_H$  of medium, III, 852.  
growth and respiration of, III, 63.  
infections by, treatment of, with sulphacetimide, III, 162.  
phosphoglyceric acid dissimilation by, III, 780.
- Eserine**, action of, on central nervous system, intrathecally injected, in man, III, 882.  
complementary action of, in neurohumoral activation, III, 676.  
detection of, II, 68.
- Esmodil**, effect of, on adrenaline hyperglycaemia, III, 769.  
hyperglycaemia from, III, 708.
- Esters**, II, 100.  
aliphatic, sodium enolates, acylation and alkylation of, II, 130.  
photolysis of, I, 108.  
ammonolysis of, II, 344.  
carboxylic, kinetics of hydrolysis of, I, 148.  
Fries rearrangement of, II, 95.  
halogeno-aliphatic, hydrolysis of, I, 149.  
hydrolysis of, alkyl-oxygen bond cleavage in, II, 141.  
kinetics of, I, 149.  
phenolic, preparation of, II, 401.  
polymerised, linear, chain structure of, I, 136.  
preparation of, from acid chlorides and alcohols in presence of metals, II, 391.  
reaction of, with halogens and magnesium, II, 246.  
reduction of, catalytically, with nickel catalyst, II, 129.
- $\psi$ -Esters**, II, 100.
- Esterase**, atropine, activation and inhibition of, III, 935.  
distribution of, III, 172.  
in eggs. See under **Eggs**.  
tropine, specificity of, III, 172.
- Esterification**, rate of, effect on, of chlorine and of oxygen, II, 297.
- Esterification constants in neutral solvents**, II, 215.
- Etalon**, Fabry-Perot, internally reflected light from, I, 125.
- Ethane**, carbon-hydrogen bond strength in, I, 258.  
decomposition of, equilibrium constant of, I, 239.  
dissociation of, by electron impact, I, 404.  
equilibrium of, with ethylene, I, 367.  
m.p.-pressure curve of, I, 89.  
spectrum of, band, I, 193.  
vibrational, I, 385.  
thermal decomposition of, effects of high-voltage discharge on, I, 151.
- Ethane**, dibromo-, and dichloro-, photochemical formation of, from ethylene, I, 404.  
pentachloro-, photochemical chlorination and oxidation of, I, 151.  
dihalogeno-derivatives, Raman spectra of, I, 41.  
nitro-, ionisation of, between  $-32^\circ$  and  $20^\circ$  C., I, 104.
- Ethane-1-selenonic acid**, potassium salt, II, 430.
- Ethanesulphonamide**,  $\alpha$ -chloro-, II, 75.
- Ethanesulphonic acid**,  $\alpha$ -hydroxy-, acetyl derivative, potassium salt, II, 76.
- Ethanol**. See **Ethyl alcohol**.
- Ethanolamine**, effect of, on liver-lipin in rats, III, 755.  
metallic complexes of, I, 337.
- Ethanolamine**, reaction of, with ethyl bromomalonate, II, 298.  
See also **Monolate**.
- Ethanolammonium chloride**, metallic complexes of, I, 337.
- Ether**. See **Ethyl ether**.
- Ethers**, acetylenic, II, 214.  
autoxidation of, in presence of didiphenylene-ethylene, II, 49.  
chloro-substituted, hydrolysis of, I, 401.  
cleavage of, by boron bromide, II, 281.  
compounds resembling, II, 297.
- Ethinylœstradiol**, treatment with, orally, III, 525.
- Ethoxides**, formation of, in ethyl alcohol, I, 367.
- Ethoxyacetic acid**, *n*-propyl ester, II, 430.
- $\gamma$ -Ethoxy- $\alpha$ -acetobutyric acid**, ethyl ester, II, 53.
- $\alpha$ -Ethoxy- $\gamma$ -acetyl- $\delta\delta$ -dimethylnonane**, and its derivatives, II, 345.
- Ethoxyacetylene**, II, 214.
- 7-Ethoxyacridine**, 2:5-diamino-, preparation of, II, 425.
- $\alpha$ -Ethoxyacrylonitrile**, addition to, of hydrogen bromide, II, 79.
- p*-Ethoxybenzoic acid**,  $\beta$ -*n*-butylaminoethyl ester, hydrochloride, II, 404.
- 5-Ethoxybenzthiazole**, 6-nitro-, 6-nitro-5- $\beta$ -amino-, and 6-nitro-5- $\beta$ -hydroxy-, II, 153.
- 6'-Ethoxybenzthioindigos**, II, 333.
- Ethoxy-6:7-benzthioindirubin**, II, 333.
- 6'-Ethoxybenzthioindirubins**, II, 333.
- Ethoxydibenzthioindigos**, II, 333.
- 6-Ethoxy-5:6:5'-6'-dibenzthioindigo**, II, 333.
- Ethoxydibenzthioindirubins**, II, 333.
- 6-Ethoxydibenzthioindirubins**, II, 333.
- 4'-Ethoxydimethylaminoazobenzene**, II, 192.
- $\alpha$ -Ethoxy- $\delta\delta$ -dimethyl- $\gamma$ -ethylidenenonane**, II, 345.
- 8-Ethoxy-5:6-dimethylquinoline**, and its picrate, II, 378.
- 5-Ethoxy-3:3-diphenyl-1-methyloxindole**, II, 329.
- $\beta$ -Ethoxyethyl- $\alpha$ -dimethylhexylacetacetic acid**, ethyl ester, II, 345.
- $\beta$ -Ethoxyethyl- $\alpha$ -dimethylhexylacetoneitrile**, II, 345.
- $\beta$ -Ethoxyethyl- $\alpha$ -dimethylhexylcyanoacetic acid**, ethyl ester, II, 345.
- $\beta$ -Ethoxyethyl- $\alpha$ -dimethylhexylmalonic acid**, ethyl ester, II, 345.
- $\beta$ -Ethoxyethylene**,  $\alpha$ -bromo-, II, 214.
- $\gamma$ -Ethoxyethyl- $\alpha$ - $\beta'$ -phenylethyl-*n*-butyric acid**, amide, II, 78.
- 5-Ethoxy-*N*-ethyl-*m*-4-xylylidine**, II, 138.
- $\alpha$ -Ethoxy- $\Delta^0$ -hexadecenoic acid**, ethyl ester, II, 346.
- $\alpha$ -Ethoxymino- $\beta\delta$ -diketoadipic acid**, diethyl ester, copper salt, II, 394.
- $\alpha$ -Ethoxymino- $\beta\delta$ -diketohexoic acid**, ethyl ester, and its copper salt, II, 394.
- 6-Ethoxylepidine**, 2-amino-, II, 288.
- p*-Ethoxymethoxybenzaldehyde**, II, 361.
- p*-Ethoxymethoxybenzylidene-*p'*-phenetidine**, II, 361.
- 3'-Ethoxy-4-methoxydeoxybenzoin**, II, 9.
- 4'-Ethoxy-2-methylazobenzene**, 4-amino-, II, 192.
- $\gamma$ -Ethoxymethyl-*n*-butyric acid**, amide, II, 78.
- 8-Ethoxymethyl- $\Delta^4$ -heptadien- $\delta$ -ol**, II, 430.
- 2-Ethoxy-6-methylpyrimidine**, 4-amino-, II, 151.
- 4-Ethoxy-6-methylpyrimidine**, 4-amino-, II, 151.
- 6'-Ethoxy-7-methylthioindigo**, 5-chloro-, II, 333.
- 6-Ethoxy-4-methylthioindigo**, 6'-chloro-, II, 333.
- 6'-Ethoxymethylthioindirubins**, chloro-, II, 333.
- 5-Ethoxy-*N*-methyl-*m*-4-xylylidine**, II, 138.
- 2-Ethoxy-3-naphtho-*N*-benzoylanilide**, II, 197.
- $\beta$ -4-Ethoxy-1-naphthylethyl alcohol**, picrate, II, 57.
- $\beta$ -4-Ethoxy-1-naphthylethylphthalimide**, II, 57.
- 5-Ethoxy-1-phenylbenzthiazole**, 6-nitro-, II, 153.
- 2-Ethoxyphenylhydrazine**, 5-nitro-, and its derivatives, II, 204.
- 1-(2-Ethoxyphenyl)-3-methyl-5-pyrazolone**, 1:5-nitro-, II, 204.
- N*- $\alpha$ -Ethoxyphenylpropylideneimine**, II, 210.
- $\alpha$ -Ethoxypropionitrile**,  $\alpha$ - and  $\beta$ -bromo-, II, 79.
- $\beta$ -( $\gamma$ -Ethoxypropyl)butyric acid**,  $\alpha\beta$ -dicyano-, ethyl ester, II, 53.

- $\beta$ -( $\gamma$ -Ethoxypropyl)crotonic acid,  $\alpha$ -cyano-, ethyl ester, II, 53.
- 2-Ethoxypyrimidine, 4-amino-, II, 151.
- 4-Ethoxypyrimidine, 2-amino-, II, 272.
- 2-Ethoxyquinoline, 4-amino-, acetyl derivative, II, 378.
- 4-Ethoxyquinoline, 2-chloro-, II, 378.
- 4-Ethoxy- $\Delta^2$ -tetrahydrobenzaldehyde, and its semicarbazone, II, 262, 406.
- 6-Ethoxythioindigo, II, 333.
- 6-Ethoxythioindirubin, II, 333.
- 6-Ethoxythionaphthenquinone-2-*p*-hydroxyanil, II, 333.
- $\alpha$ -Ethoxyvinyltrimethylammonium bromide, II, 4.
- 5-Ethoxy-*m*-xylene, 4-nitro-, II, 138.
- 5-Ethoxy-*m*-4-xylidine, and its hydrochloride, II, 138.
- Ethyl alcohol, addicts to, chronic, gastric mucosa of, III, 393.
- antagonism of amphetamine sulphate to, in rabbits, III, 336.
- concentration of, in relation to intoxication, III, 484.
- determination of, by micro-diffusion, III, 656.
- in blood, III, 724.
- in breath, as medicolegal test, III, 336.
- in forensic medicine, III, 427.
- with photo-electric colorimeter, III, 724.
- effect of, on blood volume, III, 87.
- on vision, III, 380.
- on vitamin-A in blood, III, 93.
- on vitamin-A in blood and liver, III, 620.
- equilibrium of, with benzene and glycerol in boiling solution, I, 329.
- with benzene and water, I, 240.
- with methyl alcohol and water, I, 263.
- with water, I, 367.
- fate of, in animal body, III, 258.
- fractionation of cattle blood-iodine with, III, 438.
- heats of mixing of acetic acid, its ethyl ester, and, I, 267.
- metabolism of. See under Metabolism.
- Mollier diagrams for mixtures of, with air, II, 331.
- poisoning by. See under Poisoning.
- vapour-phase partial oxidation of, I, 177.
- Ethyl alcohol, tri-bromo-, rectal, visceral lesions from, III, 924.
- treatment with, bromine distribution after, in cats, III, 924.
- Ethyl chloride, administration of, III, 412.
- Ethyl ether, anaesthesia with. See under Anaesthesia.
- convulsions from. See under Convulsions.
- decomposition of, thermal, in presence of propylene, I, 402.
- detonation of mixtures of air and, I, 67.
- inflammability of mixtures of oxygen, helium, and, I, 102.
- photochemical production of branched carbon chains from formaldehyde and, II, 389.
- Ethyl hydrogen peroxide; oxidation-reduction potential of, mixed with haemoglobin, I, 268.
- mixed with methaemoglobin, III, 774.
- iodide, reaction of, with copper salts, I, 149.
- mercaptan, ignition temperature and inflammability of, I, 369.
- oleyl ether, II, 390.
- oleyl sulphide, II, 390.
- 1-Ethyl-7-acenaphthenol, II, 86.
- 1-Ethyl-7-acenaphthene, II, 86.
- 1-Ethyl-7-acenaphthylacetic acid, II, 86.
- $\alpha$ -Ethylacetoacetic acid,  $\alpha$ - $\beta$ ' $\beta$ '-trichloro- $\alpha$ -hydroxy-, ethyl ester, and its acetate, II, 215.
- condensation of, with alkylresorcinols and ethylpyrogallol, II, 268.
- $\beta$ -Ethylaminoisobutyl alcohol, and its *p*-nitrobenzoate, II, 283.
- 1-Ethylamino-2-methylnaphthalene, II, 307.
- 3-*N*-Ethylaminomethylpyridine, and its salts, II, 288.
- 4-Ethylaminophenylphosphinic acid, 3-amino- and 3-nitro-4- $\beta$ -hydroxy-, II, 122.
- Ethylammonium decaborate, I, 335.
- chloride, chloro-, metallic complexes of, I, 337.
- Ethylisoamylbarbituric acid. See Amytal.
- 4-Ethyl-4-isoamylhydantoin, II, 271.
- Ethylisoamylmalonic acid, and its diisoamyl ester, II, 247.
- 2-Ethyl-1- $\delta$ -anilo- $\Delta^8$ -butenylidenebenzthiazoline, II, 154.
- 2-Ethyl-1- $\beta$ -aniloethylidenebenzthiazoline, II, 154.
- 2-Ethyl-1- $\zeta$ -anilo- $\Delta^{8\beta}$ -hexadienylidenebenzthiazoline, II, 154.
- 3-Ethylbarbituric acid, 4-imino-3- $\beta$ -hydroxy-, II, 117.
- 10-Ethyl-1:2-benzanthracene, solubility of, I, 170.
- p*-Ethylbenzenesulphonamide, II, 136.
- $\beta$ -Ethylbenzenesulphonamide,  $\beta$ -bromo-, II, 57.
- N*-Ethylbenzilanilide, II, 329.
- [2-(3-Ethylbenzoxazole)][3-(4-ethyl-2:4-benzthiazine)]trimethincyanine iodide, II, 182.
- [2-(3-Ethylbenzthiazole)][3-(4-ethyl-2:4-benzthiazine)] $\gamma$ -azatrimethincyanine iodide, II, 182.
- [2-(3-Ethylbenzthiazole)][3-(4-ethyl-2:4-benzthiazine)]trimethincyanine iodide, II, 182.
- Ethyl- $\beta$ -benzyloxyethylmalonic acid, II, 77.
- 5-Ethyl-5- $\beta$ '-butoxyethoxyethylbarbituric acid, II, 151.
- 5-Ethyl-5- $\beta$ '-butoxyethylbarbituric acid, II, 151.
- Ethyl- $\beta$ -butoxyethylmalonic acid, II, 77.
- Ethylbutyl bromoacetate, II, 214.
- p*-Ethyl-sec-butylbenzene, II, 84.
- Ethylbutylmalonic acid, dibutyl ester, II, 247.
- Ethylisobutylmalonic acid, and its diisobutyl ester, II, 247.
- 2-Ethyl-5-*tert*-butyl-*m*-xylene, and dinitro-, II, 85.
- $\alpha$ -Ethyl-*n*-butyrylphenylhydrazide, II, 215.
- $\alpha$ - $\alpha'$ -Ethyl-*n*-butyryl- $\alpha$ -pentamethylenebinitret, effect of, on uterus, III, 412.
- 1- $\alpha$ -Ethyl-*n*-butyrylphenobarbital, 1- $\alpha$ -bromo-, II, 180.
- 9-Ethylcarbazole, 3:6-dibromo-, II, 114.
- 9-Ethylcarbazole-6-carboxylic acid, 3-iodo-, II, 114.
- Ethylcellulose, technical, ethoxy-groups in, and their distribution, II, 167.
- 6-Ethylcoumarin, 7:8-di-hydroxy-, II, 202.
- Ethyldeoxophorphyrin- $\alpha$ , 2:9-di-hydroxy-, II, 383.
- N*'-Ethyl-*N*'-diethylaminoethylaniline, anti-histamine activity of, III, 769.
- 5-Ethyl-1:3-dioxan, 5-amino-, and 5-nitro-, II, 111.
- $\beta$ -*N*-Ethyl-*n*-dodecylaminoethyl alcohol, II, 404.
- 5-Ethyl-5-*n*-dodecylbarbituric acid, 5- $\beta$ -bromo-, and 5- $\beta$ -hydroxy-, II, 151.
- Ethyldeoxysulphone, II, 163.
- Ethylene, adsorption of amylene and, on activated charcoal, I, 170.
- catalytic dimerisation of, II, 213.
- derivatives, halogen addition to, I, 243.
- substituted, structure and properties of, I, 353.
- Diels-Alder reaction with, II, 167.
- equilibrium of, with ethane, I, 367.
- with propylene, I, 23.
- hydrogenation and polymerisation of, I, 301.
- m.p.-pressure curve of, I, 89.
- mercury-photosensitised reactions of, I, 151.
- polymerisation of, by free alkyl radicals, I, 270.
- photosensitised by cadmium atoms, I, 372.
- spectrum of, absorption, infra-red, I, 193.
- viscosity of, under pressure, I, 140.
- zinc-photosensitised reactions of, I, 304.
- Ethylene, tetrabromo-, reaction of, with bromine, I, 306.
- cis*- and *trans*-dichloro-, energy of isomerisation of, I, 98.
- trichloro-, anaesthetic action of. See under Anaesthetics.
- determination of, II, 44.
- tetrachloro-, coma after dosage with, III, 260.
- spectrum of, Raman, I, 41.
- halogen derivatives, spectra of, Raman, I, 83.
- Ethylene bromide and chloride, dipole moments of, I, 8.
- $\alpha$  $\beta$ -dibromohydrin  $\gamma$ -acetate, II, 247.
- chlorohydrin, kinetics of reaction of, with sodium hydroxide, I, 207.
- dihalides, electric polarisation of, I, 43.
- Ethylene glycol, apparent and partial volumes of sodium bromide in, I, 15.
- determination of, mixed with glycerol and propylene  $\alpha$  $\beta$ -glycol, II, 276.
- ethyl ether, toxicity of, in rats, III, 636.
- oxidation of, by periodate, I, 243.
- toxicity of, in rats, III, 636.
- Ethylenediamine, II, 116.
- Ethylenediamine-theophylline, treatment with, against anoxia, III, 297.
- Ethylenediaminebisfurfuraldoximenickel, II, 28.
- Ethylenediaminebisfurfuraldoximepalladium, II, 28.
- Ethylenediaminetetra-acetic acid, copper, nickel, and uranyl compounds of, I, 334.
- Ethylenedi-imine, complexes of, with salicylaldehyde, spectra of, absorption, I, 352.
- Ethyleneethiocarbamides, detection of, II, 212.
- Ethyleneic compounds, chlorination of, by *tert*-butyl hypochlorite in methanol, II, 72.
- Ethyleneic linkings. See under Linkings.
- 1-*N*-Ethylephedrine hydrochloride, action and toxicity of, III, 922.
- $\alpha$ - and  $\beta$ -19-Ethyl-17-equilenones, 3-hydroxy-, II, 105.
- Ethyl- $\beta$ -ethoxyethylmalonic acid, II, 77.
- 5-Ethyl-2- $\alpha$ -ethyl-*n*-amyl-1:3-dioxan, 5-amino-, and 5-nitro-, II, 111.
- Ethylethylene oxide,  $\alpha$ -bromo-, and  $\alpha$ -chloro-, II, 295.
- $\beta$ -Ethylgentiobioside,  $\beta'$ -chloro-, heptaacetate, II, 134.
- $\beta$ -Ethyl-*D*-glucoside,  $\beta'$ -chloro-, 2:3:4-triacetate, and its 6-triphenylmethyl ether, II, 134.
- $\alpha$ -Ethylglutaric acid, and its dianilide, II, 29.
- $\beta$ -*N*-Ethyl-*n*-heptylaminoethyl alcohol, II, 404.
- 5-Ethyl-5-*n*-hexadecylbarbituric acid, 5- $\beta$ -bromo-, and 5- $\beta$ -hydroxy-, II, 151.
- Ethylhexadecylsulphone, II, 163.
- $\alpha$ -Ethylhexahydrodeoxyanisoin, II, 362.
- $\alpha$ -Ethylhexaldehyde, reaction of, with  $\beta$ -aminoisobutyl alcohol, I, 282.
- $\beta$ -Ethyl-*n*-hexane,  $\alpha$  $\gamma$ -diamino-, and its dihydrochloride, II, 168.
- $\beta$ -Ethylhexanol arsenite, II, 343.
- $\alpha$ -Ethylisohexic acid,  $\alpha$ -cyano-, *n*-propyl ester, II, 247.
- $\beta$ -Ethyl-*n*-hexyl nitrite, II, 215.
- Ethylhexylamine, and its hydrochloride, II, 288.
- $\beta$ - $\beta'$ -Ethyl-*n*-hexylaminoethyl alcohol, and its picrate, II, 394.
- Ethylhexylaminomethyl-6-methoxy-4-quinolylcarbinol, and its dipicrate, II, 288.
- Ethylhomocholine, esters, II, 301.
- 17-Ethylidene- $\Delta^2$ -3-acetoxyandrostene, 17- $\beta$ -bromo-, II, 268.
- $\gamma$ -Ethylidenepropene- $\alpha$  $\beta$ -diol arsenite, II, 343.
- $\beta$ -Ethyliminoadipic acid, methyl ethyl ester, II, 426.
- Ethyl ketones,  $\beta$ -chloro-, syntheses with, II, 317.
- Ethylmalonic acid, esters, II, 247.
- N*-Ethylmesidine, 3-bromo-, II, 138.
- 5-Ethyl-5- $\beta'$ -methoxyethylbarbituric acid, II, 151.
- Ethyl- $\beta$ -methoxyethylmalonic acid, II, 77.
- 5-Ethyl-5-( $\alpha$ -methyl- $\Delta^2$ -butenyl)barbituric acid, sodium salt. See "Delvinal sodium."
- p*-Ethyl- $\alpha$ -methyl-*n*-butylbenzene, II, 84.
- 1- and 3-Ethyl-4:5-methylenephenanthrenes, and their picrates, II, 85.
- p*-Ethyl- $\alpha$ -methyl-*n*-heptylbenzene, II, 84.
- p*-Ethyl- $\alpha$ -methyl-*n*-undecylbenzene, II, 84.
- 2-Ethyl-1:4-naphthaquinone, 3:5:8-tri- and 3:5:6(or 7):8-tetra-hydroxy-, II, 410.
- $\beta$ -Ethyl- $\alpha$ -naphthoamide,  $\beta$ -bromo-, II, 57.
- 2-Ethyl-1-naphthylacetic acid, II, 86.
- $\gamma$ -6-Ethyl-2-naphthyl- $\Delta^2$ -pentenoic acid, II, 305.
- $\gamma$ -6-Ethyl-2-naphthylvaleric acid, II, 305.
- $\beta$ -Ethyl- $\Delta^2$ -noninen- $\beta$ -ol,  $\alpha$ -chloro-, II, 295.
- Ethylnonylamine, and its hydrochloride, II, 288.
- 5-Ethyl-5-*n*-octadecylbarbituric acid, 5- $\beta$ -bromo-, and 5- $\beta$ -hydroxy-, II, 151.
- 3-Ethyl-octahydroindole, II, 116.
- Ethyl- $\gamma$ -pentylmalonic acid, di- $\gamma$ -pentyl ester, II, 247.
- 1-Ethylphenobarbital, 1- $\beta$ -bromo-, -chloro-, and -hydroxy-, II, 180.
- Ethyl- $\beta$ -phenoxyethylmalonic acid, II, 77.
- Ethyl- $\gamma$ -phenoxypropylmalonic acid, II, 77.

- N*'-4-Ethylphenylsulphanilamide, *N*'-4- $\beta$ -amino-, and its derivatives, II, 51.
- C*-Ethylphloroglucinodialdehyde, and its bis-phenylhydrazones, II, 260.
- 5-Ethylisophthalic acid, II, 141.
- 5-Ethyl-5-pinacolonylbarbituric acid, II, 32.
- $\beta$ -Ethylprimoveroside,  $\beta'$ -chloro-, hexaacetate, II, 134.
- $\beta$ - $\alpha'$ -Ethyl-*n*-propylaminoethyl alcohol, and its picrate, II, 394.
- $\beta$ -*N*-Ethyl-isopropylaminoethyl alcohol, II, 404.
- 4-Ethyl-4-*n*-propylhydantoin, II, 271.
- 4- $\alpha$ -Ethyl-*n*-propylhydantoin, II, 271.
- 5-Ethylpyrazole, and its picrate, II, 334.
- 5-Ethylpyrazoline, II, 334.
- 5-Ethylpyrimidine, 2-amino-, 2-amino-6-hydroxy-, and 6-chloro-2-amino-, II, 151.
- 3- $\beta$ -hydroxy-, synthesis of, II, 116.
- 5-Ethyl-2-pyrone, II, 29.
- 5-Ethyl-2-pyrone-6-carboxylic acid, and its *p*-bromophenacyl ester, II, 29.
- 1-Ethylpyrrol-5-one-2-acetic acid, ethyl ester, II, 426.
- $\beta$ -Ethylretene, and its derivatives, II, 305.
- 2-Ethylsulphonylpyrimidine-5-carboxylic acid, ethyl ester, II, 331.
- 3-Ethyl-1,2:3,6-tetrahydrophthalic anhydride, II, 293.
- 4-Ethylthiazole, 2-thiol-, II, 36.
- 1-Ethylthiobenzthiazole ethiodide, II, 154.
- 2-Ethylthiol-4-methylthiazole, and its picrate, II, 36.
- 5-Ethyl-*n*-undecyl-1:3-dioxan, 5-amino-, and 5-nitro-, II, 111.
- Ethylundecylsulphone, II, 163.
- 3-Ethyluracil, 4:5-diamino-3- $\beta$ -hydroxy-, II, 117.
- 3-Ethyluric acid, 3- $\beta$ -hydroxy-, synthesis of, II, 116.
- 3-Ethylviolic acid, 4-imino-3- $\beta$ -hydroxy-, II, 117.
- Eucarvone thiosemicarbazone, II, 415.
- Eudalene, synthesis of, II, 27.
- Eufavine, determination of, II, 292.
- Eugenol, synthesis of, II, 309.
- Eunuchism, suprapituitary adamantinoma and, III, 219.
- Eunuchoid, female, treatment of, with oestrogen, III, 311.
- Eunuchoidism, male, parenteral implantation and oral administration of testosterone compounds in, III, 605.
- testosterone implantation in, III, 127.
- treatment of, with methyltestosterone, orally, III, 315.
- Euonymus fortunei*, pro- $\gamma$ -carotene and prolycopene from, III, 863.
- Europium, fluorescence of complexes of, I, 258.
- radiochemistry of, I, 35.
- separation of, from rare earths, as amalgam, I, 178.
- spectrum of, spark, I, 77.
- Europium alloys with mercury, I, 110.
- Europium sulphate octahydrate, heat capacity of, I, 321.
- Europium determination:—determination of, I, 114.
- Eustrongylides*, larvae, culture of, III, 652.
- Eutrichomastix colubrorum*, agglutination of, III, 350.
- Evaporators, micro-, I, 281.
- Evipal. See Evipan.
- Evipan, anaesthesia with. See under Anaesthesia.
- sodium derivative, effect of, on heart and circulation, III, 482.
- Evodionol, and its derivatives, II, 61.
- Ewes, ancestral, heat and ovulation production in, III, 130.
- Excreta, determination in, of 1:2:5:6-dibenzanthracene and 4':8'-dihydroxy-1:2:5:6-dibenzanthracene, in rats, III, 822.
- Exophthalmos, III, 519.
- experimental, and myopathy, induced by thyrotropic hormone, III, 521.
- of anterior pituitary origin, III, 684.
- intermittent, III, 519.
- pulsating, III, 885.
- Expectorants, III, 550.
- iodides, III, 711.
- Experiments, controlled, four-fold table for, III, 182.
- See also Lecture experiments.
- Explosions, gaseous, I, 66.
- chain-thermal, characteristics of, I, 300.
- demonstrations of, I, 215.
- Extraction, liquid-liquid, I, 294.
- Extraction apparatus, I, 251.
- Soxhlet, I, 343.
- Extremities, absence of, III, 429.
- painful, after injury, rehabilitation of, nerve blocks with novocaine in, III, 516.
- upper, sympathectomy of, III, 741.
- See also Feet, Fingers, and Hands.
- Exudates, inflammatory, leucocytosis-promoting factor in, in man, III, 509.
- Eyes, absorption by, of sulphonamide derivatives after application, III, 678.
- accommodation in, III, 680.
- adaptation of, dark, and blood-vitamin-A measurements in North Carolina nutrition survey, III, 449.
- and fluoroscopy, III, 886.
- colour receptor sensitivities measured by, III, 224.
- in children, III, 24.
- in relation to plasma-vitamin-A level, III, 886.
- test for, III, 886.
- vitamin-A in relation to, III, 24, 114, 223, 829, 886.
- dim, in relation to diet, III, 380.
- anterior chamber of, depth and volume of, measurement of, photographically, in man, III, 519.
- volume of, in man during life, III, 519.
- aqueous humour of, distribution of sulphanilamide and its derivatives between blood and, III, 22.
- equilibrium between blood and, III, 589.
- high vitamin-C content of, III, 679.
- in relation to uveitis, III, 589.
- protein content of, in man, III, 22.
- aqueous veins in, III, 589.
- atrophy of, bitemporal, with drusen of optic papilla, III, 682.
- Biotôt's spots in, in Trinidad, III, 24.
- cataractous, visual acuity in, III, 23.
- changes in, due to ageing, III, 588.
- colour difference sensitivity of, in daylight, III, 743.
- conjunctiva of, detection of avitaminosis-A by examination of, III, 676.
- convergence of, III, 587.
- hysterical spasm in, III, 588.
- insufficiency of, III, 21.
- cornea of, III, 678, 742.
- band-shaped opacity of, with atrophic arthritis, III, 22.
- diseases of, treatment of, riboflavin in, III, 678.
- dystrophy of, crystalline, III, 679.
- epithelial tumours of, III, 885.
- lipoid degeneration of, III, 679.
- penetration into, of sulphanilamide and its derivatives, III, 588.
- preserved, carbohydrate metabolism of, III, 22.
- growth of elements of, III, 304.
- transplantation of, heterogeneous and homogeneous, III, 222.
- ulcers in. See under Ulcers.
- discrimination and localisation in, neural mechanisms of, III, 225.
- diseases of, due to vitamin deficiency in Trinidad, III, 221.
- in Tasmania, III, 587.
- disturbances in, in acromegaly with diabetes, III, 519.
- downward displacement of, III, 677.
- effect of suction on, III, 519.
- electrical response of, diurnal changes in, in arthropods, III, 224.
- flicker response contour of, for crayfish, III, 224.
- Fovea of, flicker response function outside, III, 115.
- fundus, congenital anomaly of, III, 23.
- Eyes, glare discomfort of, intrinsic brightness as factor in, III, 591.
- heredomacular degeneration in, III, 590.
- histology of, in arachnodactyly, III, 113.
- human, refraction of spectral qualities of light by, III, 114.
- injuries to, industrial, III, 742.
- ophthalmoscopy after, III, 223.
- insects', oscillatory electrical activity from, III, 448.
- intraocular fluid of, formation of, epinephrine rôle in, III, 22.
- intraocular tension in, during insulin coma, III, 113.
- iris of, donervated, effect of adrenaline on, in cat and monkey, III, 519, 679.
- lens generation from, and its inhibition in urodeles, III, 590.
- miotic action of lecithin and kephalin on, III, 449.
- response of, to stimulation of its parasympathetic nerve supply, III, 588.
- lens of, ageing, visual prognosis for, III, 680.
- biochemistry of, III, 113, 380.
- changes in, in diabetic coma, III, 680.
- crystalline, history of, III, 23.
- high vitamin-C content of, cause of, III, 679.
- inhibition of Woffian regeneration by, III, 885.
- lesions in, due to corneal ulcers, III, 590.
- posterior subcapsular opacities of, after uveitis, III, 743.
- respiratory metabolism of, III, 680.
- vascular sheath behind, prematurity and fibroblastic overgrowth of, III, 590.
- lesions in, due to *Staphylococcus aureus*, chemotherapy of, III, 627, 678.
- mustard gas, in men and rabbits, III, 588.
- lime burns of, rabbit peritoneum in treatment of, III, 222.
- microanatomy of, with slit-lamp microscope, III, 589.
- Moore's subjective "lightning streaks" in, III, 680.
- movements of, and visual perception, III, 212.
- muscles of, ciliary, sympathetic nerve pathway to, III, 589.
- nutritional oedema signs in, III, 680.
- phenomena in, III, 115.
- physical and physiological differences in, in relation to body build, III, 221.
- pigment migration in, action of eyestalk extracts on, III, 224.
- in moths, III, 676.
- pupil of, diameter of, III, 222.
- effect on, of white light intensity, III, 679.
- isolated, effect of benzene and its derivatives on, III, 742.
- response of, to stimulation of cortex and telencephalon in cats, III, 742.
- tonic syndrome of, III, 588.
- retina of, acetylcholine in, during disuse, III, 380.
- as basis of colour reception, III, 114.
- ascorbic acid and glutathione in, III, 681.
- central vein thrombosis of, treatment of, with heparin, III, 873.
- ciliary, tumours of, III, 681.
- detachment of, subretinal fluid in, due to tears, III, 591.
- use of thermophore for, III, 223.
- during insulin coma, III, 113.
- electrical activity of, records of, in man, III, 224.
- gliomas of. See Retinoblastoma.
- haemorrhage of, after sulphathiazole ingestion, III, 681.
- in diabetes, III, 518.
- in newborn, III, 23.
- pigment migration in, effect of infra-red light on, III, 743.
- effect of splenectomy on, III, 743.
- pigmentary degeneration of, III, 590.
- redox systems of, III, 681.

- Eyes, retina of, studies of, III, 590.**  
 visual purple of, behaviour of, at low temperature, III, 23.  
 photosensitivity of, in ultra-violet, III, 519.  
 visual purple solutions from, phospholipin rôle in, III, 113.  
 rotation of, laws of, III, 806.  
 scotopic sensitivity of, in ultra-violet, III, 519.  
 size of, relation between number of optic nerve fibres and, in dogs, III, 886.  
 spectacle condition of, treatment of, with biotin in rats, III, 448.  
 with inositol in rats, III, 472.  
 strain of, III, 587.  
 sulphathiazole penetration into, III, 678.  
 sulphonamide and albulid-soluble penetration into, in rabbits, III, 221.  
 superior rectus and inferior oblique muscle of, paralysis of, III, 588.  
 testing of, of school children, III, 21.  
 tissues of, carbonic anhydrase in, III, 680.  
 visual acuity of, III, 115.  
 visual acuity and illumination of, III, 379.  
 visual disorientation of, due to lesions of right cerebral hemisphere, III, 225.  
 visual disturbances in, in undulant fever, III, 23.  
 visual measurements of, III, 115.  
 visual mechanism of, III, 25.  
 visual responses of, in cat and monkey, III, 224.  
 vitamins and, III, 221.  
 vitamin-B-complex deficiencies in relation to, III, 221.  
 vitreous body, respiratory metabolism of, III, 680.  
 vitreous humour of, detachment of, III, 223.  
 hydrogel qualities of, III, 223.  
 water movement in, III, 589.  
 See also Vision.
- Eyeballs, compression of, effect of, on blood-sugar in normal, splanchnicotomised, and adrenalectomised rabbits, III, 93.**  
 sclera of, curvature of, III, 22.
- Eyeglasses, antifogging action of soap on, III, 788.**
- Eyelids, closure reflex of, effect on, of thyroid implants in tadpole hind brain, III, 594.**  
 imperception for position of, on one side, III, 741.
- Eye-stalk, extracts of, action of, on retinal pigment migration, III, 224.**
- F.**
- Fæces, bacteriology and biochemistry of, III, 270, 644.**  
 benzidine blood reaction in, III, 243.  
 cellulose-splitting micro-organisms in, in man, III, 818.  
 composition of, effect of bran on, III, 30.  
 determination in, of carotenoids and vitamin-A, III, 457.  
 effect on, of citrated blood administration in man, III, 457.  
 of skin diseases, III, 318.  
 excretion of sulphaguanidine in, III, 919.  
 iron-hamatoxylin-stained smears of, dehydration and clearance of, III, 243.  
 mesobilirubinogen in, (l)stercobilin formation from, in man, III, 819.  
 mixing apparatus for suspensions of, in helminthology, III, 723.  
 pollen in, III, 394.  
 protoporphyrin-IX from, of rats, III, 394.  
 sulphonamides in, III, 840.  
 urobilinogen in, III, 461.
- Fallopian tubes, cancer of, primary, III, 325.**  
 glycogen content of, during menstrual cycle and pregnancy, III, 136.  
 human, ascorbic acid in, during menstrual cycle and pregnancy, III, 912.  
 lipin content of, during menstrual cycle and pregnancy, III, 140.  
 ovum transport through, III, 312.
- Fallot's tetralogy, visualisation of heart and great vessels in, III, 13.**
- $\alpha$ -Faragine, cardiac and hæmodynamic action of, III, 164.**
- 3-Farnesyl-1:4-naphthazarin, 2-hydroxy-, and its quinol diacetate, II, 149.**
- Farnesylpyridinium *p*-toluenesulphonate, II, 348.**
- Fat or Fats, absorption of, effect of adrenalectomy on, III, 608.**  
 in intestines, III, 456.  
 acids of, in wild animals and birds, III, 612.  
 body, frogs', composition of, III, 35.  
 pigs', composition of, effect of sex on, III, 34.  
 deposition of, serum ultrafiltrate for study of, III, 728.  
 determination of, in animals and plants, III, 952.  
 in blood, volumetrically, III, 799.  
 hydrolysis of, by enzymes, III, 418.  
 metabolism of. See under Metabolism.  
 nutritional value of, III, 251.  
 solvents for, in industry, causing myeloid metaplasia, III, 486.  
 specific dynamic action of, in normal and depancreatised rats, III, 257.  
 staining of, by Sudan dyes, impurities and isomeride mixtures in, III, 85.  
 structure of tissues of, III, 146.  
 vitamin-B<sub>2</sub>-sparing action of, III, 761.
- Fatigue, in double work periods, III, 773.**  
 industrial, III, 773.  
 recovery from, influence of vitamin-B complex constituents on, III, 908.
- Favism, III, 491.**  
 blood changes in, in children, III, 87.
- Fear, gastric acidity in relation to, III, 815.**
- Feathers, development of, III, 659.**
- Feet, circulation in, effect of drugs on, III, 801.**  
 dorsum of, arterial network supplying, III, 1.  
 planter response development in, in infants, III, 107.
- Fehling's solution, components of, I, 334.**  
 titration of, with phenylhydrazine, I, 368.
- Felty's syndrome, III, 797.**
- Femur, congenital defect of, III, 505.**  
 measurements on, in man, III, 432.  
 of Punjabis, squatting index of, III, 867.  
 phosphatase content of, effects of adrenal cortical and parathyroid extracts on, in rats, III, 361.  
 effects of sex hormones, thymus extract, and thyroxine on, in rats, III, 361.
- $\alpha$ -Fenchane, 2-amino-, and its derivatives, II, 325.**
- $\beta$ -Fenchane, 2-amino-, and its derivatives, II, 325.**
- $\beta$ -Fenchanecarbamide, II, 325.**
- $\beta$ -Fenchane-2-carboxylic acid, and its derivatives, II, 325.**
- Fenchene, dimerisation of, with clay catalysts, II, 325.**
- $\alpha$ -Fenchocamphorone semicarbazone, II, 325.**
- Fenestra nov-ovalis, for improvement of hearing, in otosclerosis, III, 226.**
- Fenugreek, effect of, on growth of rats, III, 468.**
- Fermentation, acetone-butyl alcohol, III, 345, 852.**  
 bacterial, III, 851, 852.  
 citric, action of insulin on, III, 716.  
 co-enzyme of, III, 848.  
 gases evolved in, collecting tube for, III, 62.  
 inhibition of, by potassium cyanide and sodium fluoride, III, 848.
- Ferrihæmate, pathological changes after injections of, in dogs, III, 661.**  
 rôle of, in production of lesions in malaria, III, 661.  
 See also Parasites, pigment of.
- Ferritoporphyrin, nitrogen derivatives, re-action of, with cyanides, II, 208.**
- Ferrite, high-temperature magnetisation of, I, 48.**
- Ferromagnets, two-dimensional, I, 318.**
- Ferromagnetic crystals, magnetic susceptibility and coercive force of, I, 11.**  
 quantum theory of magnetostriiction of, I, 12.  
 powders, anisotropy of, I, 26.
- Ferromagnetic substances, gyromagnetic effects in, I, 137.**  
 scattering of polarised X-rays by, I, 166.  
 suspensions, magneto-optical properties of, I, 44, 316.
- Ferrum reductum, treatment with, of anæmia, III, 871.**
- Fertilisation, inhibition of, and membrane elevation by high hydrostatic pressures, III, 453.**
- Fertility, in sheep; hormonal augmentation of, III, 813.**  
 in stallions, III, 314.
- Fever, artificial, treatment with, herpes simplex after, III, 713.**  
 of neurosyphilis, III, 713, 884.  
 as sulphathiazole toxicity manifestation, III, 48.  
 blackwater. See Blackwater fever.  
 glandular. See Glandular fever.  
 hay. See Hay fever.  
 produced by amidopyrine, III, 843.  
 puerperal. See Puerperal fever.  
 Q. See Q fever.  
 rat-bite. See Rat-bite fever.  
 relapsing, in Abyssinia, III, 645.  
 rheumatic. See Rheumatic fever.  
 scarlet. See Scarlet fever.  
 spotted. See Meningitis, cerebrospinal.  
 therapeutic, plasma-proteins in, III, 732.  
 tropical, transmission of, III, 349.  
 undulant. See Undulant fever.  
 yellow. See Yellow fever.
- Fibrinasthenia, hæmophilia due to, in new born, III, 195.**
- Fibrinogen, crystallisation and isolation of, from pig blood, III, 873.**  
 determination of, with protamine, III, 511.  
 flocculation maximum of, III, 511.  
 plasma-, in healthy subjects, III, 9, 369.  
 solutions, surface elasticity of, I, 96.
- Fibrinolysin, streptococcal, resistance to, in blood clots, III, 854.**
- Fibroadenoma, transplantable, carcinomatous transformation in, in rat, III, 902.**
- Fibroblasts, growth of, effect on, of temperatures, and application to wound healing, III, 433.**  
 of uræmic serum and urine, III, 85.  
 of visible light, III, 286.  
 in serum containing sulphathiazole, III, 918.  
 heart. See under Heart.
- Fibroma, bone. See under Bone disease.**
- Fibroplasia, effect on, of hypophysectomy, III, 809.**
- Fibrositis, procaine infiltration in, III, 770.**  
 treatment of, with vitamin-E, III, 376.
- Fibrous materials, deformation and micellar structure of, I, 231.**  
 electron-micrographs of, I, 290.
- Fibula, absence of, congenital, III, 281.**
- Ficin, parasitocidal properties of, III, 50.**  
 properties of, III, 631.
- Filariasis, of breast, III, 526.**  
 treatment of, with sulphapyridine, III, 410.
- Films, diffusion of gases through, I, 171.**  
 insoluble, surface, fugacity and heat of expansion of, I, 325.  
 mobility of, adsorbed on solid surfaces, I, 396.  
 unimolecular, condensed, general structure for, I, 264.  
 insoluble, interaction between adsorbed substances and, I, 265.  
 reactions in, I, 396.  
 rôle of hydrogen bonds in, I, 264.  
 viscosity and relaxation in, I, 95.  
 surface, replicas, for use with electron microscope, I, 378.  
 thin, electron diffraction by, I, 47, 260.
- Filters, laboratory, fused porcelain-pyrex, I, 214.**  
 pressure, I, 214.  
 Seitz, changes in reaction caused by filtration through, III, 939.  
 pressure, III, 426.
- Filter pumps, laboratory, economising water usage by, I, 119.**
- Filtration, maintaining constant level in funnels for, I, 159**



- Filtration apparatus**, I, 343.
- Fingers**, agnosia of, III, 586.
- clubbing of, congenital, III, 429.
- extension mechanism of, in man, III, 505.
- flexor tendons of, treatment of adhesions of, with amnioplastin, III, 695.
- joints, arthritis of. See under Arthritis.
- Fire blight**, transmission of, by bees, in relation to nectar concentration, III, 645.
- Fischer reagent**, I, 112; II, 68.
- Fish**, changes in mineral substances in, III, 901.
- edible, Bengal, determination in, of cystine, tyrosine, and tryptophan, III, 901.
- euryhaline, visual systems in, III, 114.
- flat, morphology and pigment anomalies in, III, 362.
- fresh-water, arsenic in, III, 35.
- fats of, III, 247.
- oils from, III, 395.
- oxygen requirements of, III, 900.
- swim-bladder gases of, effect of asphyxiation on, III, 735.
- ganoid and teleostean, development and phylogeny of corpuscle of Stannius in, III, 506.
- gobioid. See *Boleophthalmus boddarti*.
- iron in, III, 901.
- non-haemin, III, 901.
- larvae of, respiration of, diurnal rhythms in, III, 103.
- melanomas in, genetics of, III, 249.
- nicotinic acid content of, III, 701.
- nutritional investigations on, III, 901.
- phallostethid, internal anatomy of, III, 2.
- plants poisonous to, II, 211.
- selachian, inter-renal body of, fat of, III, 685.
- zebra. See *Brachydanio rerio*.
- See also *Lebistes reticulatus*.
- Fish-liver oils**, determination in, of vitamin-A spectrophotometrically, III, 253.
- shark, vitamin-A content of, III, 619.
- Fistula**, gastrojejunocolic, III, 816.
- pancreatic, III, 143.
- tracheo-oesophageal, congenital, III, 281.
- umbilical, congenital, due to omphalomesenteric duct, III, 430.
- urinary, genital changes due to, in female rabbit, III, 234.
- urogenital, effect of, on fertility in rabbits, III, 313.
- Fits**, audiogenic, heart rate and respiration preceding and following, in rats, III, 447.
- in rats, III, 739.
- in pyridoxine-deficient rats, III, 701.
- Flagellum**, mechanics of, III, 247.
- Flames**, cool, propagation of, in combustible mixtures containing carbon disulphide, I, 101.
- gases in, I, 385.
- hydrocarbon, spectra of, I, 6.
- hydrogen-deuterium, isotope separation and combustion of, I, 147.
- ionised gas, current-potential curves in, I, 157.
- of gases, spectra of, with photo-cells, I, 73.
- temperature in, effect of water vapour on, I, 400.
- radiation from, I, 400.
- speed of, displacements of mixtures to give maximum, I, 101.
- Flame tests**, paper instead of platinum wire in, I, 214.
- Flasks**, pyrex, breaking of, I, 214.
- volumetric, calibration of, I, 281.
- Flatfoot**, congenital, III, 506.
- Flatulence**, epigastric, gastric tension in, III, 29.
- intestinal. See under Intestines.
- Flavanones**, condensation of, with chalkones, II, 327.
- Flavanones**, hydroxy-, formation of, II, 268.
- Flavin**, content of, in adipose tissue, III, 395.
- See also Vitamin-B<sub>2</sub>.
- Flavines**, determination of, gravimetrically, II, 292.
- Flavone**, 3:5:8:3':4':5'-hexahydroxy-, II, 110.
- Flavylum chloride**, 3:7:8:3':4'-pentahydroxy-, II, 10.
- Flax**, pectin of, II, 187.
- Flax plants**, roots, secretion by, of toxic substance, III, 861.
- zinc deficiency in, III, 722.
- Flax seed**, respiration of, III, 72.
- Fleas**, water sensitivity to, III, 71.
- Flies**, blow-, physiology and toxicology of, III, 256.
- See also *Lucilia cuprina*.
- saw-, European spruce. See *Gilpina polytoma*.
- Flocculation**, precipitation and, I, 21.
- Floors**, surfacing-material for, bacteriology of, III, 492.
- Flour (wheat flour)**, "enriched," value of, in American diet, III, 152.
- national wheatmeal, digestibility of, III, 905.
- proteins of, biological value of, III, 905.
- sulphur protein from, crystalline hydrochloride of, effect on small laboratory animals of injection of, III, 771.
- white, vitamin-B<sub>1</sub> assay in, III, 470.
- Flour beetle**. See under Beetles.
- Flow**, channels of, in fluid media, I, 15.
- in stressed solids, I, 167.
- of gases, laboratory regulator for, I, 119.
- viscous, mathematical theory of, I, 51.
- Flowmeters**, capillary, I, 119.
- laboratory, I, 188, 412.
- resistor for, I, 250.
- Fluids**, exchange in, III, 531.
- postoperative administration of, to children, III, 876.
- streaming, transfer of matter between smooth plates and, I, 324.
- Fluoranthrene**, mono- and di-bromo-derivatives, II, 192.
- tri- and tetra-bromo-, II, 192.
- Fluorene**, 2-amino-, acetyl derivative, toxicity and carcinogenic activity of, III, 248.
- growth inhibition by, in bacteria and rats, III, 643.
- Fluorene-9-aldehyde**, 2:7-di-bromo-, and its derivatives, II, 192.
- Fluorene-9-carboxylanilide**, 9-amino-, II, 273.
- Fluorene-9-carboxylic acid**, derivatives of, anaesthetic and spasmolytic action of, III, 841.
- Fluorene-9-oxalic acid**, 2:7-di-bromo-, ethyl ester, and its salts, II, 192.
- Fluorenonespirohydantoin**, hydrolysis of, by alkalis, II, 273.
- Fluorescein**, use of, as indicator in bromometric analysis, I, 375.
- Fluorescence**, quenching of, in solution, I, 82.
- Fluorides**. See under Fluorine.
- Fluorimeters**, photo-electric, I, 249; III, 503.
- supersonic cell, I, 116.
- Fluorine**, I, 336.
- action of, on organic compounds, II, 84.
- at. wt. of, I, 78, 311, 382.
- deuteron-tritium reaction in, I, 5.
- effect of  $\gamma$ -rays from, on recoil electrons from carbon, I, 382.
- in dicalcium phosphate, toxicity of, III, 712.
- internuclear distance in, I, 38.
- poisoning by. See under Poisoning.
- Fluorine compounds**, assimilation of, from cryolite and cryolite-sprayed fruits, by rats, III, 907.
- from fluorine-bearing minerals, food, and water, III, 907.
- dietary, assimilation of, effect of calcium and phosphorus on, III, 405.
- effect of, on rat caries, III, 828.
- in saliva, III, 141.
- retention and elimination of, in bones, III, 247.
- Hydrofluoric acid**, chain association of, I, 318.
- condensations with, II, 344.
- Fluorides**, complex, crystal structure of, I, 290.
- formation of, in anhydrous liquid hydrofluoric acid, I, 180.
- structure of, I, 230.
- determination of, in water, by zirconium-alizarin method, I, 153.
- effect of, on caries and tooth composition in rats, III, 926.
- low-reflexion evaporated films of, on glass, I, 157.
- Fluorine compounds** :—
- Fluorides**, permeability of yeast cells for, III, 174.
- physical chemistry of aqueous solutions of, I, 241.
- potential of, in aqueous solutions, I, 241.
- Fluorine determination** :—
- determination of, I, 339.
- as bismuth fluoride, I, 276.
- in organic compounds, II, 43, 338.
- in phosphate rock, I, 339.
- magnesium acetate as ashing agent in, III, 504.
- Fluorite**, spectrum of, near infra-red, I, 353.
- Fluorography**, III, 503.
- Fluoroscopy**, and dark adaptation, III, 886.
- Fluorosis**, dental, associated with caries, in London children, III, 699.
- skeletal, in sodium fluoride poisoning, III, 712.
- Fluorosulphonic acid**, 2-diphenyl ester, II, 354.
- Flying**. See Aviation.
- Foam time**, I, 172.
- Foaming capacity**, determination of, I, 295.
- Foerster, Otfrid**, III, 587.
- Foetus**, abnormalities in, causing difficult labour, III, 361.
- calcium nutrition of, III, 814.
- circulatory anomalies in, in pigs, III, 658.
- effect on, of scopolamine, III, 549.
- growth and calcium and phosphorus storage of, dependence of, on parathyroid and diet of pregnant rat, III, 404.
- human, aneurin content of organs of, III, 154.
- cleft sternum of, III, 865.
- developing, acetylcholine-esterase in, III, 554.
- early movements of, III, 726.
- nerves and skin structures of, III, 362.
- nicotinamide in, III, 831.
- iron supply of, III, 141.
- mortality of, in post-maturity, III, 453.
- stillborn, neuroblastoma, ganglioneuroma, and fibrosarcoma in, III, 378.
- See also Embryos.
- Fogs**, formation of, I, 168.
- infra-red transmission through, I, 80.
- Folinerin**, pharmacodynamic action of, on cardiovascular mechanism in dogs, III, 923.
- Fomes lignosus**, pathogenicity of, III, 786.
- Fonsecaea pedrosoi** in chromoblastosis, III, 491.
- Food**, or Foods, arsenic in, III, 537.
- lead in, III, 828.
- maritime province, ascorbic acid in, III, 255.
- mixed, calorogenic effect produced by, III, 765.
- nation's, III, 907.
- proteins of. See under Proteins.
- vitamins and, III, 760.
- Foramen magnum**, congenital deformities in region of, III, 658.
- Foramen primum**, patent, III, 362.
- Forces**, statistical, I, 256.
- Force constants**, internuclear distances and, I, 385.
- Formaldehyde**, action of, on chlorophenols, II, 112.
- on gonadotropins, III, 239.
- benzyl and methylbenzyl acetals, II, 255.
- biological fixation with, III, 563.
- condensation of, II, 299.
- with o-chlorophenol, I, 358.
- with malonamide, II, 350.
- detection of, colorimetrically, II, 159.
- equilibrium of, with alanine and glycine, II, 348.
- occurrence of, in atmosphere of Venus, I, 193.
- oxidation of, mixed with ammonia, II, 302.
- photochemical production of branched carbon chains from ether and, II, 389.
- reaction of, with ethyl pyromucate, II, 373.
- spectrum of, Raman, I, 289.
- treatment with, of noma, III, 162.
- Formaldehydesulphoxylic acid**, sodium salt, treatment of, of mercury poisoning, III, 926.
- Formaldoxime**, pyrolysis of, I, 105.
- Formamide**, reaction of, with carbonyl compounds, II, 350.
- viscosity of dioxan solutions of, I, 140.

- Formazyl compounds, metallic derivatives, II, 88.  
tautomerism of, II, 89.  
Form-4,4'-dibromobenzhydramide, 372.  
Form-4,4'-dibromo-2,3,5,6-tetradeuterobenzhydramide, II, 253.  
Formic acid, anhydrous, f.p. and conductivity in solutions in, I, 297.  
bornyl ester, II, 369.  
entropy of, I, 399.  
furfuryl ester, II, 419.  
ionisation constant of, in dioxan-water mixtures, I, 62.  
methyl ester, photolysis of, I, 108, 404.  
nickel salt, catalysts of. See under Catalysts.  
Form- $\alpha$ -2-thienyl- $n$ -propylamide, II, 269.  
17-Formylandrosterone-3( $\beta$ )-17( $\beta$ )-diol, II, 368.  
 $\Delta^4$ -17-Formylandrosterone-17( $\alpha$ )-ol-3-one, II, 368.  
Formylation of amino-groups, II, 339.  
2-Formylbenzoic acid, 3,5-dihydroxy-, and its methyl ester, and their 2,4-dinitrophenylhydrazones, II, 260.  
 $\Delta^2$ -2-Formylcholestene, and its derivatives, II, 102.  
Fossils, micro-, non-calciferous, separation of, with bromoform, III, 656.  
Fourier series, machine for summation of, I, 389.  
Fowls, domestic, ovulation in, hormone-induced, III, 600.  
domestic and guinea, reciprocal crosses between, III, 728.  
genetics of, III, 431.  
infertility in, spermatozoal antibodies in relation to, III, 126.  
ultimobranchial body of, III, 790.  
See also Chickens, Cocks, *Gallus domesticus*, Hens, and Poultry.  
Fowl pox virus in respiratory tract, III, 353.  
Foxes, blood chemistry of, III, 434.  
Fractures. See under Bone.  
Francolite, Richtersveld, S. Africa, I, 344.  
Freezing of tissues, for use with sliding microtome, III, 570.  
Freezing points, determination of, from dielectric constants, I, 158.  
minimising supercooling in, I, 158.  
equation for, I, 201.  
French, Acadian, in Canada and Louisiana, physical comparison of, III, 82.  
Friction, I, 51.  
of solids, I, 199.  
Amonton's law and effect of adsorbed films on, I, 264.  
phenomena of, I, 139, 140, 266, 322, 326.  
sliding, electrostatic component of force of, I, 85.  
Friedel-Crafts reaction, II, 97, 198.  
aluminium-aluminium chloride in, II, 260.  
amalgamated aluminium as catalyst in, II, 136.  
ketone synthesis by, with catalytic metallic chlorides, II, 227.  
mechanism of, II, 136.  
metallic chlorides as catalysts for, II, 143.  
with alkoxydiphenyl ethers, II, 362.  
with keten, II, 16.  
Friedman test, use of zipper in, III, 526.  
Friedreich's disease, Charcot-Marie-Tooth disease and, syndrome combining, in one family, III, 217.  
Fries rearrangement, II, 95, 175.  
*Früllaria*, chromosome pairing in, control of, III, 568.  
*Früllaria roylei*, peimine and pelminine from, II, 66.  
*Früllaria verticillata*, alkaloids of, action of, on rabbits, III, 337.  
Fröhlich syndrome, III, 521.  
without brain tumour, untreated, III, 122.  
Frogs, hybrid, developmental rate of, III, 659.  
See also *Bufo* and *Xenopus*.  
Frostbite, III, 373.  
Fructosans, caramelisation of, by heat, II, 190.  
Fructose, caramelisation of, by heat, II, 190.  
cyanohydrin, toxicity of, III, 424.  
determination of, in blood, skatole colour reaction in, III, 512.  
metabolism of. See under Metabolism.  
removal of, from blood, effect of hypophysectomy on, in rats, III, 747.  
*D*-Fructose pentapropionate, II, 79.  
 $\beta$ -*D*-Fructose tetra-azobenzene-4-carboxylate, II, 395.  
*keto-d*-Fructose, 1-bromo-, and 1-chloro-, tetraacetates, II, 395.  
Fructose-1-phosphoric acid, isolation of, III, 724.  
Fructosuria, essential, III, 756.  
respiratory metabolism in, III, 541.  
Fructus belæ, III, 170.  
Fruit or Fruits, analysis of, spectroscopically, III, 501.  
citrus. See Citrus fruit.  
determination in, of carbon dioxide and organic volatiles, III, 950.  
of  $\beta$ -carotene, III, 699.  
developing, cell division in, III, 562.  
Indian, constituents of, II, 431.  
refrigerated, pectin-cellulose complex in, III, 563.  
tropical, III, 653.  
Fruit trees, protective value of gums of, for colloidal sols, I, 61.  
*L*-Fucitol, and its derivatives, II, 296.  
Fucostadienone, and its derivatives, II, 286.  
Fucosterol, structure of, II, 410.  
Fucoxanthins, III, 655.  
*Fucus*, eggs, alkalinity and developmental axis in, III, 188.  
developmental axis of, effect of shape on, III, 188.  
effect of ultra-violet light on, III, 867.  
polarised plasmolysis of, in relation to ultra-violet light, III, 567.  
*Fucus furcatus*, eggs, effect of irradiation on rhizoid development in, III, 416.  
Fumarase, in plant tissues, III, 947.  
inactivation of, by metallic ions, III, 935.  
Fumaric acid, catalysed isomerisation of maleic acid to, I, 149.  
magnesium salt, cathartic efficiency and toxicity of, in mice and rabbits, III, 631.  
*trans-trans*-methyl ester, crystal structure of, I, 319.  
disodium salt, cathartic efficiency and toxicity of, in mice and rabbits, III, 631.  
laxative action and toxicity of, III, 630.  
synthesis of, and its oxidation, II, 299.  
Fumigants, for disinfection of bedding and clothing, III, 772.  
Fumigatin, III, 420.  
and its methyl ether, bacteriostatic action of, III, 490.  
synthesis of, II, 23.  
*Fundulus*, development of, oxygen consumption in, III, 187.  
gonads and pituitary of, III, 124.  
*Fundulus heteroclitus*, hypophysectomy in, III, 599.  
melanophoric responses to light in, III, 224.  
seasonal cycle in gonads of, III, 129.  
sexual cycle in, male, effect of light and temperature on, III, 125.  
spermatogenesis in, effect of environment on, III, 125.  
Fundus glands, secretion of, effect of sodium salicylate on, III, 316.  
Fungi, activity of, effect of plant by-products on, III, 423.  
effect on, of sulphanilamide and its derivatives, III, 411.  
formation by, of bacteriostatic substances, III, 937.  
infection by, diagnosis and treatment of, III, 642.  
nuclear migration in, effect of electric field on, III, 556.  
pigment formation by, III, 490.  
preservation of, by desiccation, III, 938.  
skin reactions to, in respiratory allergy, III, 71.  
soil and wood-destroying, lignosulphonate decomposition by, III, 343.  
spores, dispersal and isolation of, III, 556.  
effect of ultra-violet light on, III, 267.  
wood-rotting, biochemistry of, III, 786.  
Fungicides, testing of, for prevention of spread of athlete's foot, III, 411.  
Funnels, electrical heater for, I, 185.  
separating, mechanical shaker for, I, 188.  
Fur, greying of, effect on, of *p*-aminobenzoic acid, III, 40.  
See also Achromotrichia.  
Fur workers, health hazards in, III, 338.  
onycholysis in, III, 338.  
Furamide, formation of, from  $\beta$ -furfuraldoxime, II, 28.  
Furan compounds, Grignard reaction with, II, 107.  
reactions of, II, 399.  
Furan nucleus, oxidative fission of, II, 148.  
2'-3'-7:8-Furanoflavone, II, 112.  
Furfuraldehyde, condensation of, with aniline and its hydrochloride, II, 399.  
 $\beta$ -Furfuraldoxime, conversion of, into furamide, II, 28.  
 $\beta$ (anti)-Furfuraldoxime, metallic complexes of, II, 28.  
Furfuryl alcohol, dehydration and stabilisation of, II, 328.  
5-2'-Furfurylfurfuryl alcohol, and its derivatives, II, 328.  
2-2'-Furfuryl-5-5'-hydroxymethyl-2'-furfuryl-furan, II, 328.  
Furfurylideneacetone, oxime of, II, 178.  
Furfurylidene- $\beta$ -hydroxyethylamine, II, 399.  
Furfuryltrimethylammonium iodides, physiological action of, III, 630.  
Furnaces, electric, laboratory, refractory materials for, I, 212.  
2-Furoamido-*m*-cresol, 4-bromo-, II, 119.  
2-Furoamidophenol, 4-mono- and 4:2-5'-di-bromo-, II, 119.  
Furoic acid, esters of, and 5-bromo-, and its derivatives, II, 119.  
1-Furoylbenzoxazolone, II, 119.  
2-2'-Furylbenzoxazole, and 5-bromo-, II, 119.  
2-Furyl- $\gamma$ -diethylaminopropylcarbinol, II, 193.  
4-2'-Furylhydantoin, II, 271.  
2-2'-Furyl-6-methylbenzoxazole, 5-bromo-, II, 119.  
 $\theta$ -Furylnonatetraenal, II, 175.  
 $\xi$ -Furylpentadecaheptaenol, II, 175.  
 $\omega$ -Furylpolyenealdehydes, preparation of, II, 175.  
Furylisopropylamine, II, 373.  
 $\mu$ -Furyltridecahexaenal, II, 175.  
 $\kappa$ -Furylundecapentaenal, II, 175.  
*Fusarium lini*, alcoholic fermentation of carbohydrates by, III, 343.  
Fusion, theory of, I, 292.

## G.

- Gadolinium, separation of, from neodymium and samarium, I, 373.  
*D*-Galactal, reaction of, and its acetate, with hydrogen peroxide and osmium tetroxide in *tert*.-butanol, II, 79.  
2-*D*-Galactohexahydroxy-*n*-heptylbenzimidazole, II, 393.  
Galactose, absorption of, from gastro-intestinal tract in deficiency disease, III, 529.  
metabolism of. See under Metabolism.  
phenylmethylphenylosazone, and its tetraacetate, II, 47.  
tolerance to, in thyroid disease, III, 836.  
*d*-Galactose diethylmercaptopentacetate, polymorphism of, II, 166.  
pentapropionate, II, 79.  
*a*-*D*-Galactose penta-azobenzene-4-carboxylate, II, 395.  
Galacturonic acid, effect of, on intestinal bacilli, III, 852.  
Galena-sphalerite, deposits of, in N.E. Alabama, I, 219.  
Galls, crown, and attenuated crown, physiology of, and of *Bacillus radiobacter*, III, 939.  
growth-substance in, III, 861.  
polysaccharide formed by organism producing, II, 251.  
Gall-bladder, absence of, congenital, III, 430.  
absorption from, of undigested protein, III, 32.  
contraction of, substances for, III, 32.  
double, III, 790.

- Gall-bladder, dyspepsia.** See under *Dyspepsia*.  
function of, altered, in pregnant guinea-pig, III, 610.  
lymph drainage of, III, 319.
- Gall-bladder disease, diagnosis of, radiological, cholecystography in, III, 610.**
- Gall-stones, composition of, III, 32.**  
formations of, factor of stasis in, III, 394.  
in new-born, III, 32.  
See also *Calculi*.
- Gallacetophenone, 3:4-diacetate, II, 149.**
- Gallium, I, 373.**  
 $\gamma$ -rays from, I, 128.
- Gallium alloys with silver, I, 323.**
- Gallium salts, I, 335.**
- Gallium trichloride, catalytic action of, I, 332.**  
dipole moments of, and its molecular compounds, I, 165.  
vapour density and vapour pressure of, I, 233.
- hydride, I, 335.  
hydroxylammonium alum, I, 373.  
sulphates, with amines, I, 373.
- Gallium detection and determination:—**  
detection of, reagents for, I, 376.  
determination of, by fluorescence with 8-hydroxyquinoline, I, 115.
- Gallium cathodes.** See under *Cathodes*.
- Gallus domesticus, embryonic development in, influence of riboflavin deficiency in eggs on, III, 431.**  
stomach of, Golgi apparatus during development of, III, 508.  
See also *Chickens, Cocks, Fowls, Hens, and Poultry*.
- Gambusia, anal fins of, III, 567.**  
gonopodium regeneration of, during morphogenesis, III, 567.
- Ganglia, basal, lesions in, in cats, III, 212.**  
spinal, living cells of, III, 285.  
proprioceptive impulses within, synchronisation of, III, 446.  
vascular supply of, III, 211.
- Ganglioside, II, 302.**  
from ox spleen, II, 351.
- Gangrene, gas, bacilli of. See under *Bacilli*.**  
toxins of, biochemistry of, III, 270.  
growth of, in gelatin-thioglycollate media, III, 557.  
treatment of, with oxygen, III, 879.  
with X-rays, III, 339.  
with sulphanilamide, III, 919.  
of end-organs, after adrenaline-procaine anaesthesia, III, 633.
- Gargoylism, III, 186.**  
granules in leucocytes in, III, 88.  
See also *Dysostosis multiplex*.
- Garlic. See *Allium sativum*.**
- Gas, electron, magnetic susceptibility of, I, 30.**
- Gases, adsorption of, from low to high pressures, I, 360, 395.**  
van der Waals, on glass plates, I, 170.  
monatomic, transport cross-sections of mixtures of, I, 51.  
polyatomic, axially oriented, X-ray interference of, I, 259.  
Bose-Einstein, condensation and heat capacity of, I, 261.  
degenerate, effusion in, I, 228.  
Bose-Einstein and Fermi-Dirac, energy flow for, in thermal transpiration, I, 228.  
collision excitation of intramolecular vibrations in, and their mixtures, I, 49.  
compressed, Kerr effect and molecular order in, I, 9.  
diffusion of, through high polymerides, I, 171.  
dissociating, isentropic changes of state in, I, 369.  
dynamics of, effects of heat capacity lag in, I, 200.  
electric discharge in, I, 2, 191.  
at low pressures, I, 78.  
glow, current density at cathode in, I, 311.  
electrical precipitation apparatus for, laboratory, I, 214.  
electrical strength of, I, 8.  
energy absorption coefficients of, I, 161.  
explosions of. See *Explosions, gaseous*.
- Gases, flames of, temperature of, effect of water vapour on, I, 400.**  
flow of, laboratory regulator for, I, 119.  
freshly-burnt, state of, I, 400.  
frictional phenomena in, I, 139.  
hot, luminosity of, I, 385.  
hydrogenation and polymerisation of, I, 301.  
imperfect, statistical mechanics of, I, 45.  
imperfections of, from heat of vaporisation and vapour pressure, I, 357.  
inert, fluorescence of phosphors in, I, 257.  
ionisation of, by collisions of their own atoms and molecules, I, 161.  
light scattering in, I, 315.  
low-pressure tanks for, portable, I, 119.  
many-component, statistical mechanics of, I, 262.  
mean free paths of, in mercury vapour, I, 354.  
mixed, binary, viscosity of, I, 322.  
compressibility of, I, 90.  
equation of state for, I, 90.  
ignition of, I, 102.  
in lungs, III, 102.  
second virial coefficient for, I, 322.  
velocity of diffusion in, I, 140.  
molecules, structure of, I, 224.  
natural, liquefaction and fractionation of, lecture experiment on, I, 188.  
of sedimentary basins of Ontario, I, 188.  
oxygen-containing, chain-breaking in, I, 208.  
polar, second virial coefficients of mixtures of, I, 140.  
polytropic, thermodynamic properties of, I, 10.  
rarefied, excitation of, by electromagnetic waves, I, 350.  
refractive indices of, at radio frequencies, I, 167.  
second virial coefficients of, I, 322.  
solubility of, and partial pressure, I, 367.  
in organic solvents, I, 359.  
measured by rotating bomb, I, 250.  
solutions of, in liquids, I, 90.  
sound-wave pressure in, I, 48.  
specific heat of, I, 232.  
equations for, I, 356.  
spectra of, absorption, infra-red, I, 39, 212.  
ultra-violet, I, 221.  
Raman, I, 195.  
supersonic dispersion in, I, 261.  
thermodynamics of, at high pressure, I, 321.  
vapour pressure of, apparatus for measurement of, II, 243.  
viscosity of, H  ppler viscosimeters for, I, 292.  
wood-distillation, electric discharge in, I, 371.
- Gas analysis, I, 183.**  
adsorption, I, 337.  
chromatographic, I, 374.  
determination of, in air, electrically, I, 308.  
in tissues, III, 427.
- Gas analysis apparatus, I, 343.**
- Gas-gangrene. See under *Gangrene*.**
- Gas generators, I, 412.**
- Gas reactions, dissociation and equilibrium constants of, I, 239.**  
homogeneous, kinetics of, I, 368.  
rapid, sound dispersion investigation of, I, 369.  
kinetics of, I, 300.  
unimolecular, activation energies of, correlated with vibrational frequencies, I, 369.
- Gasoline. See *Petrol*.**
- Gastrectomy, anaemia and osteomalacia after, III, 894.**  
total, III, 143, 241, 753, 816.
- Gastric juice, acidity of, relation of, to alveolar bone resorption, III, 392.**  
analysis of, colour indicator limitations in, III, 607.  
nitrogen content and osmotic activity of, III, 692.  
osmotic activity and sodium content of, III, 29.  
secretion of, in dogs treated with thymoxyethyl-diethylamine, III, 392.  
secretion of sulphonamide drugs in, III, 393.  
secretion-stimulating property of, III, 317.
- Gastric mucosa. See under *Stomach*.**
- Gastric ulcers. See under *Ulcers*.**
- Gastrin, III, 527.**
- Gastritis, alcoholic, chronic, III, 691.**  
atrophic, in gastric cancer, III, 816.  
treatment of, with liver-stomach concentrate, III, 607.  
nutritional, pathological changes in, in rats, III, 393.  
parasitic, treatment of, with copper-nicotine mixture and phenothiazine in lambs, III, 631.  
with phenothiazine, III, 415.  
ulcerative, after tryparsamide treatment of syphilis, III, 843.
- Gastrocnemius. See under *Muscle*.**
- Gastro-enterology, III, 391.**  
in relation to war, III, 894.
- Gastro-enterostomy, anaemia after, III, 366.**
- Gastro-intestinal disease. See under *Diseases*.**
- Gastro-intestinal tract, III, 393.**  
cancer of, hepatic dysfunction and metabolism in, III, 896.  
plasma-vitamin-A levels in, III, 93.  
development of, in rats, III, 567.  
disturbances in, treatment of, with thyroid, III, 117.  
galactose absorption from, in deficiency disease, III, 529.  
lesions in, produced by irradiation, III, 845, 850.  
motility of, after amphetamine sulphate administration in rats, III, 30.  
effect of inositol and other vitamin-B complex factors on, III, 243.  
effect of vitamin-B-complex deficiencies on, III, 894.  
motility and secretions of, effect of trauma and traumatic shock on, III, 754.  
physiology of, III, 894.  
radiography of, in children and adults, III, 242.  
response of, to barium meals, in children, III, 816, 817.  
ulceration of, production of, in cats, III, 816.
- Gastrojejunocolic fistula. See under *Fistula*.**
- Gastropods, mineral oil from, I, 348.**  
shell growth and shape in, determination of, effect of conditions on, III, 791.
- Gastro-r  ntgenography, use of opaque meal in, III, 894.**
- Gaucher's disease, III, 196, 437.**  
radiology of, III, 872.  
spleen-cerebroside in, III, 704, 797.
- Geese. See *Poultry*.**
- Geiger counters. See under *Counters*.**
- Geissler tubes, sodium-hydrogen, I, 186.**
- Gels. See *Colloidal gels*.**
- Gelatin, adsorption of soluble dyes by, I, 171.**  
aggregation of, in non-gelating systems, I, 173.  
as blood substitute after haemorrhage, III, 794.  
coagulation of, under pressure, I, 60.  
effect of, on precipitation of silver chromate, I, 60.  
films, fluorescence of dyes in, I, 132.  
fractionation of, I, 365; II, 386.  
gelation of, I, 21.  
heat-disaggregated, peptising action of, I, 60.  
solutions, heat of coagulation of, I, 60.  
solvation of, I, 60.
- Geminorum, B 1985 and WY, spectra of, I, 253.**
- Genes, action of, III, 432.**  
on serum-proteins, III, 291.  
human, symbols for, III, 662.  
X-linked modifiers in, in man, III, 5.  
manifestation of, III, 5.  
relation between, and susceptibility to pulmonary tumours in mice, III, 400.  
short ear, in mice, III, 568.
- Genetics, dominant lethals in, III, 568.**  
fowl, nomenclature of, III, 363.  
in cancer research, III, 615.  
mutation rates in, accuracy of, III, 432.  
selection in, at German Institute for Psychiatric Research, III, 5.  
of invisible mutations, III, 792.
- Geniculate body, lateral, dorsal nucleus synapses of, potential record form in vicinity of, III, 805.**  
in platyrrhine monkeys, III, 108.  
optic fibre termination in, in rabbits, III, 516.

- Genistein**, II, 134.  
 5:7-dimethyl ether, II, 303.
- Genistin**, II, 134.
- Genitals**, accessory, pubertal increase in response of, to steroid hormones, III, 690.  
 atrophy of, effect of chorionic gonadotropin on, in underfed rats, III, 134.  
 autonomic innervation of, in fowls, III, 448.  
 cancer of, in Chinese women, III, 325.  
 development and treatment of abnormalities of, III, 29.  
 development in, after antigonadotropic serum treatment in immature rats, III, 813.  
 development of sex cords in, in man and mammals, III, 566.  
 effect on, of hyperadrenalism in male rats, III, 239.  
 of oestradiol in female rats, III, 453.  
 of progesterone, in guinea-pigs, III, 813.  
 in monkeys, III, 234.  
 enzyme chemistry of, in man, III, 893.  
 external, hypertrophy of, in infancy, associated with tumour, III, 811.  
 female, accessory, cyclical changes in, effect of adrenals on, in rats, III, 119.  
 cancer of, test for, III, 324.  
 changes in, due to urinary fistula, III, 234.  
 effect of vitamins  $B_1$  and  $B_2$  on, III, 234.  
 function of, effect of urinary fistula on, in female rabbit, III, 234.  
 immature, response of, to gonadotropin, effect of testosterone on, III, 127.  
 in human hermaphroditism, III, 452.  
 response of, to green and red light treatment, in sparrows, III, 811.  
 stimulation of, associated with hyperinsulinism in infant, III, 308.  
 tissues of, effect on, of colchicine, in female mice, III, 238.  
 weight of, effect on, of oestrone and prolactin in cockerels, III, 600.  
 increase of, after pituitary injection, III, 599.
- Genital tract**, connective tissues of, effect of oestrogen on, in rats, III, 524.  
 spermatozoa survival in, in mares, III, 893.
- Gentian-violet**, bacteriostatic action of, III, 769.  
 diffusion of, III, 917.  
 treatment with, of pinworm infestation, III, 841.
- Gentiobiose**, derivatives, synthesis of, II, 302.  
 octapropionate, II, 79.
- $\beta$ -Gentiobiose azobenzene-4-carboxylate, II, 395.
- Gentic acid**, 4-bromo-, and its methyl ester, and their derivatives, II, 196.
- Geochemistry**, spectrochemical analysis in, I, 211.
- $\beta$ -Geranolapachone, II, 149.
- 2-Geranylnaphthazarin, II, 149.
- 3-Geranyl-1:4-naphthazarin, 2-hydroxy-, and its quinol triacetate, II, 149.
- Gerbils**, South African, susceptibility of, to rickettsial diseases, III, 944.
- Germ-plasm**, evolution of, III, 82.
- Germanin**, adrenal cortex degeneration caused by, III, 49.
- Germanium**, chemistry of, I, 336.
- Germanium tetrahydride**, spectrum of, rotation-vibration, I, 385.
- Germicides**, II, 203.  
 action of, on meningococci, III, 629.  
 aerosol, chemistry and physics of, III, 417.  
 cetylpyridinium chloride, III, 708.  
 destruction of bacteria by, III, 939.  
 evaluation of, manometrically, III, 62.  
 with relation to tissue toxicity, III, 922.  
 organic, III, 421.
- Gestation**. See Pregnancy.
- Giardia**, infestation with, treatment of, with atabrine in man, III, 162.
- Giardia intestinalis**, infestation with, treatment of, with "atabrine," III, 924.
- Gibberella saubinetii**, barley infection by, III, 951.
- Gibbes, Lewis Reeve**, classification of elements by, I, 283.
- Giemsa stain**. See under Stains.
- Gierke's disease**, III, 704.
- Gigantism**, treatment of, with testosterone, III, 239.
- Gilpina polytoma**, diapause in, III, 35.  
 diapause and related phenomena in, III, 147, 323.
- Gingivostomatitis**, infectious, III, 560.  
 ulceromembranous, Vincent's. See Angina, Vincent's.
- Girls**, calcium and nitrogen balance in, at puberty, effect of oestrone and stilbæstrol on, III, 132.
- Gizzard**, erosion of, effect of milk on, in chicks, III, 41.
- Glabin**, II, 46.
- Gladiolus** corams, formation by, of  $\beta$ -gentiobioside and  $\beta$ -glucoside, II, 860.  
 respiration of, after storage, III, 276.
- Glands**, ceruminous, cancer of, III, 467.  
 corticoadrenal, cell study of, in rats, III, 83.  
 endocrine, activity of, cytology of, in mammals, III, 886.  
 blood-sugar regulation by, III, 451.  
 commercial preparations of, III, 380, 807.  
 disorders in, effect on carbohydrate metabolism of, glucose-, insulin-, and glucose-insulin-tolerance test in diagnosis of, III, 624.  
 during pregnancy, effect of colchicine on, III, 305.  
 effect on, of colchicine, action of carbon tetrachloride on, III, 305.  
 of oestradiol in female rats, III, 453.  
 of visible light, III, 304.  
 hair growth in relation to, in rats, III, 592.  
 in asthma, III, 115.  
 in dermatology, III, 450.  
 products of, commercially available, III, 886.  
 sex hormone-secreting, in relation to peptic ulcer, III, 392.  
 tumours in, III, 36.  
 fundus. See Fundus glands.
- gastric, parathyroid and, relation between, in dogs, III, 607.
- Harderian**, pigment content of, sex differences in, in mice, III, 792.  
 porphyrin-excreting, in albino rats, III, 728.
- mammary and unilateral growth of**, in rabbits, III, 814.
- mammary**, cancer of, III, 396.  
 development of, after feeding preserved mammary preparation, III, 150.  
 effect of weight on, in mice, III, 823.  
 foster nursing in relation to, in mice, III, 399.  
 development and time of appearance of, effect of oestrogen on, in rats, III, 614.  
 during pregnancy, III, 152.  
 effect of light on incidence of, in mice, III, 758.  
 effect on, of sex hormones, III, 903.  
 foster nursing and genetic susceptibility for, in mice, III, 400.  
 growth of, effect of pantothenic acid on, III, 150.  
 growth rates of inbred strains of mice with, III, 37.  
 in pregnancy, gonadotropic hormone excretion in, III, 603.  
 incidence of, effect of pseudopregnancy on, III, 464.  
 in oestrogen-injected mice of different strains, III, 36.  
 material in blood influencing, III, 464.  
 milk influence in, III, 464.  
 production of, by oestrogens in mice, III, 614.  
 susceptibility to, Harderian gland fluorescent porphyrins in relation to, in mice, III, 903.  
 testosterone and progesterone in, III, 401.  
 transplanted, growth inhibition of, by oestrogen, III, 36.  
 treatment of, with rays, III, 486.  
 with cutaneous carcinosis, III, 466.  
 cancer and sarcoma of, III, 466.  
 cancerous growth processes in, of mice, III, 464.  
 contraction of, by pituitary factors, III, 125.
- Glands**, mammary, development and lactation of, effect of diethylstilbæstrol dipropionate on, III, 387.  
 effect on, of gonadotropins, growth hormone, and oestrogens, in hypophysectomised rats, III, 138.  
 of non-suckling and non-removal of milk, in mice, III, 389.  
 of oestrogen, during pregnancy, lactation, and retrogression, in mice, III, 36.  
 of oestrone, in rabbits, III, 387.  
 of pituitary, III, 29.  
 of progesterone, in male rabbits, III, 388.  
 in ovariectomised rats, III, 813.  
 excised bovine, perfusion of, III, 389.  
 extracts of, extraction and ultracentrifugation of, III, 697.  
 growth of, stimulation of, by progesterone and pituitary, III, 601.  
 with diethylstilbæstrol, in guinea-pigs, III, 602.  
 with pregnenolone, III, 29.  
 involution of, in relation to lactation inception and cessation in mice, III, 814.  
 lactating, acetone body metabolism of, in normal cows and those with ketosis, III, 333.  
 lactogenic content of, effect of stilbæstrol on, in rats, III, 387.  
 lobule-alveolar growth of, III, 390, 814.  
 nerve supply to, in bovines, III, 516.  
 nucleolus size in epithelial cells of, in relation to malignancy, III, 466.  
 perfused, effect on, of drugs and hormones, III, 892.  
 physio-pathology of, during pregnancy, III, 138.  
 postpartum, effect of stilbæstrol on, III, 386.  
 effects of testosterone and stilbæstrol on, III, 751.  
 response of, to oestrogen, effect of inanition on, III, 387.  
 supernumerary, in relation to rhesus monkeys, III, 505.  
 tumours of, classification of, III, 759.  
 effect on, of genetic factors, III, 149.  
 of heptaldehyde sodium bisulphite, in mice, III, 37.  
 of milk, in mice in relation to strain, III, 149.  
 of testosterone propionate, in mice, III, 400.  
 induction of, effect of foster nursing on, in stilbæstrol-injected mice, III, 823.  
 with cutaneous carcinosis, III, 466.  
 metrial, hormonal control of, III, 751.  
 myometrial, structure and significance of, III, 890.  
 parotid. See Parotid.  
 pineal. See Pineal gland.  
 preputial, adenocarcinoma of, transplantation of, in mice, III, 902.  
 effect on, of pituitary, in female rats, III, 384.  
 salivary, tumours in, III, 36.  
 submaxillary, secretion of, in cats, III, 316.  
 sensitisation of, to acetylcholine by chorda tympani section, III, 676.  
 thecal. See under Ovaries.  
 thyroid. See under Thyroid.  
 uterine. See under Uterus.
- Glandular fever**, III, 856.  
 diagnosis of, serologically, III, 498.  
 treatment of, with sulphanilamide, III, 479.
- Glass**, beryllium oxide-boron trioxide-lithium oxide, I, 398.  
 boric oxide, thermal expansion of, I, 89.  
 constitution of, and its potential at electrolyte interfaces, I, 368.  
 co-ordination of silicon in, I, 319.  
 detection of foreign matter on, in microanalysis, I, 282.  
 elastic after-effects and dielectric absorption in, I, 133.  
 films on, anti-reflexion, I, 212.  
 low-reflexion fluoride, I, 157.  
 lead, X-ray-protective, light transmission by, III, 553.

- Glass**, light dispersion and composition of, I, 84.  
light scattering in, I, 316.  
lithium-beryllium-borate, weakening of X-rays by, I, 198.  
optical, dispersion of, I, 228.  
spectrum of, near infra-red, I, 353.  
Raman, I, 83.  
potassium borate, X-ray diffraction and physical properties of, I, 198.  
pyrex, reaction of, with hydrogen, I, 110.  
refraction and dispersion of, I, 92.  
soda-lime, deviation of conductivity of, from Ohm's law, I, 48.  
two-component, distribution of metallic atoms in, I, 355.  
vacuum-tight sealing of mica to, I, 308.  
**Glass cloth**, dielectric properties of, in compressed gases, I, 13.  
**Glass tubes**, pyrex, sealing quartz windows into, I, 308.  
**Glassware**, nitric and sulphuric acid cleaning mixtures for, I, 119.  
removing static charges from, with ultra-violet light, I, 119.  
**Glass workers**, lead hazard of, III, 638.  
**Glaucium serpioides**, alkaloids of, II, 275.  
**Glaucoma**, III, 679.  
associated with hyaline bodies of optic disc, III, 113.  
hereditary, III, 589.  
primary, gonioscopy in, in relation to operation, III, 679.  
relation of field contraction to blood pressure in, III, 679.  
**Glaucoma piriformis**, growth of, in relation to vitamin deficiency, III, 60.  
**Glaucoma simplex**, treatment of, with carbamylcholine chloride, III, 589.  
**Glaucosites**, of New Zealand, I, 220.  
**Gliadin**, elastico-viscous properties of thin films of, I, 96.  
**Gliocladium**, toxin of, III, 937.  
**Gliomas**, angioarchitecture of, III, 219.  
cerebral. See under Cerebrum.  
growth forms of, III, 218.  
retinal. See Retinoblastoma.  
**Gliotoxin**, III, 937.  
**Globulin**, determination in, of sulphur-containing amino-acids, III, 92.  
plasma-, fraction of, clotting property of, in rabbits, III, 89.  
in healthy subjects, III, 9, 369.  
serum-, crystalline, III, 797.  
horse, effect of, on shock in dogs, III, 663.  
level of, and relation of adrenals, pituitary, and thyroid to maintenance, III, 889.  
pepsin-treated, analysis of, ultracentrifugally, III, 574.  
thyroid, treatment with, of menstrual irregularities, III, 684.  
 $\psi$ -Globulin, serum-, action on, of papain, III, 936.  
denaturation of, III, 416.  
denatured, X-ray structure of, II, 338.  
 $\psi$ -Globulin G1, horse, III, 368.  
**Glomerulonephritis**, III, 531.  
chronic, retinal lesions in, III, 23.  
serum antistreptolysin titre in, III, 854.  
with atherosclerosis, serum-cholesterol in, III, 876.  
in partially nephrectomised rats, III, 531.  
**Glomerulosclerosis**, intercapillary, III, 531.  
**Glossitis**, nutritional, treatment of, with vitamin B<sub>2</sub>, III, 909.  
**Glucanases**, III, 641.  
**L-Glucoheptulose**, oxidation of, II, 395.  
**D- and L-Glucoheptuloses**, and their derivatives, II, 395.  
**D- and L-Glucosid- and -L-idoheptitols**, and their derivatives, II, 395.  
**Gluconic acid**, ammonium salt, behaviour of, in animals and man, III, 45.  
behaviour of, in animals and man, III, 45.  
calcium salt, effect of, on bone regeneration in rats, III, 911.  
on gastric activity, III, 316.  
treatment with, III, 712.  
**L-Gluconic acid**, potassium salt, II, 395.  
**Glucosylonitriles**, spectra of, absorption, and X-ray structure, I, 386.  
**Glucosanol**, and its tetra-acetate, II, 396.  
 $\alpha$ - and  $\beta$ -D-Glucopyranose 1-phosphates, brucine salts, II, 165, 166.  
**4- $\beta$ -D-Glucopyranosido-D-mannose**. See Cellobiose.  
**Glucosacetophenone**, and its tetra-acetate, II, 396.  
 $\beta$ -Glucosaminase of testicular extracts, III, 58.  
**Glucosamine**, relation of, to growth, III, 468.  
 $\beta$ -l-Glucosan, rotation of, effect of lyotropic substances on, I, 353.  
**Glucose**, absorption of, effect of diet on, in rats, III, 257.  
from human intestines, III, 144.  
absorption and expulsion of, from stomach, III, 142.  
appetite for, increased, in insulin-treated rats, III, 685.  
assimilation of, intravenously injected in hospital patients, III, 475.  
carbohydrate combustion after administration of, in man, III, 915.  
derivatives, synthesis of, II, 302.  
determination of, II, 212.  
chromatometrically, II, 388.  
in blood, III, 576.  
dioleoyl mercaptal, II, 390.  
effect of, on blood-pantothenic acid, III, 512.  
on blood-pyruvate, III, 38.  
on diaphragm metabolism in rats, III, 332.  
on fatigue in adrenalectomised rats, III, 119.  
effect of hydrochloric acid on, II, 6.  
excretion of, by rabbit kidney, III, 394.  
feeding with, effect of, on rats on vitamin-B-free diet, III, 908.  
fermentation of, alkaline, III, 490.  
formation of, in liver, III, 836.  
in kidneys of adrenalectomised rats, III, 44.  
mixed with sulphapyridine, III, 159.  
mutarotation of, in methyl alcohol-water mixtures, I, 242.  
oxidation of, by root nodule bacteria, III, 851.  
phenylphenylmethylsazone anhydride, and its derivatives, II, 47.  
ratio of, to nitrogen, in relation to diabetes, III, 766.  
reaction of, with iodine in alkaline medium, I, 207.  
response to injection of, in rats on vitamin-B<sub>2</sub> deficient diet, III, 257.  
semicarbazones, substituted, II, 169.  
tolerance to, action of noxious agents on, III, 121.  
fatty liver in relation to, III, 457.  
normal and impaired, effect of phenobarbital on, III, 412.  
test for, III, 157, 836.  
effect of light on, III, 340.  
on normal infants, III, 451.  
utilisation of, by living and cell-free systems, effect of pantothenic acid on, III, 836.  
by living cell during respiration, effect of vitamin-B<sub>2</sub> on, III, 620.  
 $\alpha$ -D-Glucose, mutarotation of, in dioxan-water mixtures, I, 302.  
 $\alpha$ - and  $\beta$ -D-Glucoses, penta-azobenzene-4-carboxylates, II, 395.  
spectra of, Raman, I, 227.  
**Glucose-insulin**, treatment with, of alcoholism, III, 549.  
of hyperemesis gravidarum, III, 230.  
**Glucosides**, cardiac, II, 81, 218, 279.  
protective action of, against thyroxine, III, 596.  
from epimeric alcohols, II, 351.  
related to lignin, II, 134.  
senna. See under *Cassia angustifolia*.  
**4- $\beta$ -Glucosido-D-mannosan, tetra- and hexa-acetates**, II, 80, 81.  
**N<sup>4</sup>-D-Glucosidosulphanilamide**, structure of, II, 166.  
**Glutam- $\gamma$ -ethylamide**, II, 301.  
**Glutamic acid**, as bacterial growth factor, III, 780.  
hydrochloride, as substitute for hydrochloric acid in achlorhydria, III, 142.  
**Glutamic acid**, hydroxy-, occurrence of, in milk-proteins, III, 315.  
**L-Glutamic acid**, reaction of, heated with sodium hydroxide, II, 4.  
**L-(+)-Glutamic acid**, action on, of liver and kidney slices, III, 541.  
**Glutamine**, as bacterial growth factor, III, 780.  
metabolism of. See under Metabolism.  
**Glutam- $\gamma$ -methylamide**, II, 301.  
**Glutaramide**, Hofmann degradation of, II, 77.  
**2:2'-N<sup>4</sup>N<sup>4'</sup>-Glutardi(sulphanilamidothiazole)**, II, 429.  
**Glutaric acid**, behaviour of, in animal body, III, 543.  
phenyl-substituted derivatives, ethyl esters, dipole moments of, I, 227.  
**Glutaric acid**,  $\beta$ -hydroxy-, dihydrazide, II, 432.  
**Glutathione**, III, 766.  
complex of, with dehydroascorbic acid, II, 187.  
determination of, with o-iodosobenzoic acid, II, 44.  
melanin formation inhibition by, effect of oestron on, III, 130.  
reduced, disappearance of, in presence of serum, III, 198.  
spectra of, absorption, I, 194.  
**Gluten**, diffusion and dispersion of, III, 563.  
**dl-Glyceraldehyde  $\alpha$ -diphosphate**, dimeric, II, 248.  
**Glyceric acid**, phosphorylated, formation of, in blood, III, 730.  
**Glycerides**, nutritive properties of, III, 326.  
**Glycerin**. See Glycerol.  
**Glycerol**, determination of, mixed with ethylene and propylene glycols, II, 276.  
dissimilation of, by *coli-aerogenes* intermediates, III, 646.  
equilibrium of, with benzene and ethyl alcohol in boiling solution, I, 329.  
spectrum of, Raman, I, 289.  
**Glycerophosphatase** in plants, III, 936.  
**Glycerophosphatase-mutase**. See under Mutase.  
 $\beta$ -Glycerophosphoric acid, conversion of, into the  $\alpha$ -form, II, 344.  
**Glyceryl esters**, naturally-occurring, configuration of, II, 129.  
ethers, and their derivatives, II, 130.  
**dl- and l-Glycidols**, and their *p*-nitrobenzoates, II, 343.  
**Glycine**, action of, in preventing cardiazol convulsions, III, 585.  
on hippuric acid synthesis in liver, III, 896.  
on muscular strength, III, 298.  
determination of, II, 68.  
equilibrium of, with formaldehyde, II, 348.  
formation of, from serine, II, 278.  
hydrobromide, II, 349.  
peptide esters, II, 250.  
preparation of, II, 249.  
requirement of, for chicks, III, 827.  
solubility of thallosalts in, I, 141.  
specific dynamic action of, effect of  $\alpha$ -tocopherol on, III, 914.  
spectrum of, Raman, I, 289.  
synthesis of, I, 68.  
treatment with, of poliomyelitis, III, 48.  
**Glycinin**, sodium derivative, sols, stability of, I, 327.  
**Glycogen**, III, 532.  
degradation of, in muscle pulp, III, 104.  
determination of, in oysters, III, 504.  
in tissues, colorimetrically, III, 864.  
formation of, from glucose in presence of radioactive carbon dioxide, III, 408.  
formation and storage of, in liver cells, effect of X-rays on, III, 610.  
heart. See under Heart.  
hydrolysis of, mol. wt. of products of, I, 363.  
in adipose tissue, III, 542.  
in endometrium, III, 814.  
in Fallopian tubes during menstrual cycle and pregnancy, III, 136.  
liver-. See under Liver.  
muscle. See under Muscle.  
**Glycogenolysis** in liver, III, 244.  
**Glycol**. See Ethylene glycol.

- Glycols, halohydrins of, dehalogenation of, II, 409.
- 1:3-Glycols, oxidation of, by periodate, I, 243.
- Glycollaldehyde, dimeride of, II, 179.
- Glycollic acid, action of hydrogen peroxide on, II, 347.
- butyl and heptyl esters, II, 215.
- sodium salt, colloidal properties and rheometry of mixtures of, with sodium cellulose, I, 363.
- spectrum of, Raman, I, 289.
- Glycolysis, aerobic, determination of, III, 836.
- pyruvic acid in blood during, fate of, in rats, III, 294.
- Glycosuria. See Diabetes.
- Glycuronic acid, production of, by liver slices, from rats fed dimethylaminoazobenzene, III, 458.
- Glycurovanillic acid, structure of, II, 143.
- Glycurovanillin, determination of, and its hydrates, II, 143.
- Glycyl-*d*- and -*l*-leucines, II, 77.
- Glycyl-*dl*-leucyl-*dl*-alanine, methyl ester, and its hydrochloride, II, 250.
- Glycyrrhetic acid, constitution of, II, 371.
- in relation to oleanolic acid, II, 418.
- Glyoxalase, co-enzymes for, III, 265.
- Glyoxaline, synthesis of, from  $\alpha$ -oximinoketones, II, 381.
- Glyoxaline, 4-(or 5)-amino-, and its derivatives, II, 116.
- Glyoxalines, II, 63, 379.
- determination of, in urine, III, 246.
- reactions of, with 2:4-dinitrochlorobenzene and picryl chloride, II, 290.
- tautomerism of, II, 330.
- Glyoxylic acid, ethyl ester, preparation of, electrolytically, II, 130.
- $\delta$ -*p*-nitrophenylsemicarbazone, II, 169.
- Gmelin's reaction, II, 117.
- Goats, development of, early, III, 658.
- lactation in, hormonal regulation of, III, 389.
- serum and milk of, antigonadotropin in, III, 133.
- sex anatomy of, abnormal, III, 385.
- tissue-ascorbic acid of, III, 622.
- Goitre, cause of, iodine lack or noxious agent as, III, 887.
- endemic, in Yunnan Province, III, 305.
- skin capillaries and, III, 306.
- exophthalmic. See Graves' disease.
- experimental, III, 306, 309.
- prevention of, iodised salt for, III, 684.
- production of, by thiocyanates, III, 887.
- toxic, recurrent, after subtotal thyroidectomy, III, 807.
- treatment of, III, 807.
- treatment of, with serum, III, 305.
- with myasthenia gravis, III, 515.
- Gold, coated, from Cobar, N.S.W., I, 122.
- colloidal, sols, I, 236.
- Borawskaja's, III, 423.
- for light absorption measurements, I, 236.
- instability of, I, 265.
- treatment with, of rheumatoid arthritis, III, 337.
- contact angle of water against, I, 236.
- deposits of, intracerebral, after injection of gold preparations, III, 53.
- genetic correlation of deposits of silver and, with cinnabar, I, 283.
- ions, intermediate colloid state in formation of, I, 172.
- polycrystalline, electrical resistance of, I, 13.
- radioactive, I, 256.
- resonance absorption of neutrons in, I, 286.
- spectra of, I, 125.
- sputtered, action of ozone on, I, 209.
- surfaces, contact angles between organic liquids and water on, I, 396.
- thermal energy of, I, 226.
- thermal expansion of, I, 50.
- Gold alloys, with cadmium, structure of, I, 18.
- with copper, I, 169, 323.
- thermal expansion of, I, 17.
- with iron, ferromagnetic, I, 323.
- with zinc,  $\beta$ -phase in, I, 53.
- Gold compounds, distribution and excretion of, after intramuscular injection, III, 168.
- excretion of, after gold sodium thiomalate treatment of rheumatoid arthritis, III, 53.
- sulphur in, in arthritis treatment in mice, III, 926.
- tolerance to, in rats, III, 634.
- Gold sodium thiosulphate, treatment with, vulvovagino-cervical eruption due to, III, 843.
- Gold detection and determination —
- detection of, electrographically, I, 377.
- determination of, spectro-dochimically, I, 377.
- with stannous chloride, I, 341.
- Gold mines, Ropes, Michigan, I, 252.
- Sturgeon River, saline water from, I, 160.
- Gold ores, Appalachian, I, 262.
- Eastern Transbaikai, I, 347.
- geology of Konongo belt of, I, 283.
- Philippine, origin of, I, 219.
- Gold quartz, of Grass Valley, California, I, 283.
- Goldfish, hybrid, colour pattern variation of, III, 189.
- lethal limits of temperature for, III, 462.
- nervous system and X-ray pigmentation of, radiation effects on, III, 672.
- Gonads. See Genitals.
- Gonadotropic complex, secretion of, effect on, of diethylstilboestrol, III, 812.
- Gonadotropic extracts, chemical and physiological properties of, III, 522.
- Gonadotropin, activity of, oestrogenised rats for study of, III, 133.
- chorionic, determination of, by mouse-uterine-weight, III, 604.
- effect of, augmentative, III, 28.
- on atrophic genitals of underfed rats, III, 134.
- on growth in boys, III, 595.
- on height in dwarfed twin, III, 604.
- on roosters' testes, III, 238.
- on spread of particulate substances in rabbit skin, III, 813.
- elimination and excretion curve of, III, 133.
- immature gonad response to, effect of testosterone on, III, 127.
- ovarian response to, after hypophysectomy in mice, III, 314.
- synergism between, and pituitary extracts, III, 384.
- treatment with, of cryptorchidism, III, 314, 690.
- chorionic and equine, reaction of, to formaldehyde, III, 239.
- to nitrous acid, III, 604.
- determination of, in human urine, III, 604.
- effect of, on mammary glands of hypophysectomised rats, III, 138.
- on spermatogenesis and urinary androgens in man, III, 604.
- equine, determination of, III, 239.
- in blood in hydatiform moles, III, 134.
- in urine, of normal men, III, 813.
- of pregnant women, III, 134.
- pituitary, action of, and oestrogen, by percutaneous application, III, 233.
- on capillaries in menopause, III, 310.
- on roosters' testes, III, 238.
- treatment with, and testosterone, of impotence, III, 606.
- serum. See under Blood-serum.
- treatment with, of menometrorrhagia and ovarian sterility, III, 603.
- Gonococci, effect on, of sulphathiazole, *in vitro*, III, 478.
- infection by, of chick embryo, III, 647.
- isolation of, medium for, III, 493.
- metabolic requirements of, and meningococci, III, 940.
- Gonorrhoea, chemotherapy and inductopyrexia in, III, 921.
- female, treatment of, with sulphathiazole, III, 920.
- male, treatment of, with sulphapyridine, III, 839.
- of anal canal, treatment of, with sulphanilamide, III, 768.
- Gonorrhoea, treatment of, blood-sulphapyridine concentrations in, III, 839.
- with sulphanilamide, III, 478.
- with sulphapyridine, III, 47.
- with sulphapyridine and lavage, III, 47.
- with sulphathiazole, III, 101, 706.
- Gorceixite, in S. Rhodesia, I, 124.
- Gorilla, morphology of, and orang of same age, III, 568.
- Gorlic acid, physical constants of, I, 388.
- Gossypium *hirsutum*, gossypol from, II, 431.
- lint from, wax content of, III, 501.
- Gossypol, chemistry of, II, 431.
- structure of, II, 27.
- Gossypolic acid, II, 27.
- Gourd, seedlings, respiration of, III, 276.
- Gout, diagnosis of, III, 474.
- hereditary nature of, III, 836.
- in male hermaphroditism, III, 892.
- sedimentation rate in, III, 571.
- Gramicidin, action of, III, 49.
- on metabolism of bovine spermatozoa, III, 49.
- d*-amino-acids in, II, 41.
- bactericidal and hamolytic action of, III, 163.
- chemistry of, II, 42.
- pharmacology and toxicology of, III, 629.
- properties of, and its flavianate, II, 42.
- treatment with, of mastitis in cows, III, 546.
- of streptococcal infection, III, 839.
- Granite, Brittas, Eire, I, 216.
- Cape Ann, minerals in, I, 121.
- concentric patterns of, in Llano-Burnet region, Texas, I, 217.
- ores and, I, 348.
- Texas, petrography of, I, 284.
- Grantianina, and its derivatives, II, 275.
- Granulocytopenia, due to sulphonamides, III, 162.
- Granuloma, eosinophilic, of bone, III, 662.
- stomach. See under Stomach.
- Granuloma annulare, and necrobiosis lipidica, III, 474.
- Granulomatosis, cholesterol, idiopathic, III, 257.
- in liver. See under Liver.
- lipophagic, of enteric tract, III, 607.
- Graphite, adsorption by, of bromine, I, 202.
- colloidal, electrophoretic mobility of, I, 173.
- electrostatic shields of, I, 280.
- conductivity electrons in, I, 163.
- electrical resistance of, I, 47.
- melting of, in argon, I, 321.
- porous, platinised, use of, as hydrogen electrode, I, 64.
- suspensions, dispersion and stabilisation of, I, 361.
- thixotropic transformation of, I, 57.
- Graphium, pyridoxine as growth factor for, III, 621.
- Grass, dropsced. See *Sporobolus*.
- for human diet, III, 468.
- juice from, gonadotropic activity of, III, 133.
- Sudan. See *Andropogon sudanensis*.
- timothy, constituents of roots and tops of, III, 653.
- vitamins in, III, 619.
- Grass pollen, abortion after injection of, III, 356.
- Grass sickness, in horses, biochemistry of, III, 293.
- blood picture of, III, 289.
- Grasshopper egg oil, phototyrosinase activators from, III, 777.
- Graves' disease, corneal lesions in, III, 222.
- diagnosis of, radioactive iodine in, III, 381.
- iodine metabolism in, III, 381.
- recurrent, psychic factors in, III, 381.
- treatment of, with X-rays, sarcoma of neck after, III, 904.
- with myasthenia gravis, III, 105.
- See also Thyroid.
- Grenz-rays. See X-Rays, Grenz.
- Grevillea *banksii*, blossoms, dermatitis due to, III, 784.
- Grignard reaction, II, 48.
- abnormal, II, 348, 393.
- mechanism of, II, 12.
- with benzene derivatives, II, 315.



**Grignard reaction**, with furan nucleus, II, 107.  
with halogenoalkylamines, II, 193.  
with magnesium allyl bromide, II, 430.

**Grignard reagents**, aldehyde synthesis of, II, 15.  
coupling action of, II, 85.  
reaction of, with acyloxanthrones, II, 228.  
with benzoylformanilides, II, 329.  
with cyclic  $\beta$ -diketones, II, 146.  
with esters of hindered acids, II, 311.  
with organic halides in presence of metallic halides, II, 48.

**Gripheite**, I, 345.

**Groundhog**. See *Marmota monax*.

**Groups**, negative, effect of, on reactivity, I, 24.

**Growth**, action on, of amino-acids, III, 905.  
aspartic acid and glucosamine in relation to, III, 468.  
biological, "laws" of, III, 395.  
calcium and nitrogen during, retention of, III, 476.  
development and, III, 33.  
inhibition of, by 1:2:5:6-dibenzanthracene, in rats, III, 37.  
by sodium benzoate in rats, III, 327.  
by steroid compounds and hormone specific effects, III, 891.  
inhibitors and promoters of, preparation of, II, 250.  
rates of, terminology of, III, 363.  
relative, in individuals, III, 363.

**Growth substances**, III, 780.  
determination of, III, 277.  
for bacteria, III, 269.  
for insects, III, 830.  
formation of, by micro-organisms irradiated with ultra-violet light, III, 344.  
in higher plants, III, 653.

**Guaioldehyde**, and its semicarbazone, II, 171.

**Guaiol**, constitution of, II, 356.

**Guaiylcarbinol**, II, 171.

**Guanidine**, effect of, on serum- and muscle-potassium, III, 548.  
hydrochloride, treatment with, of myasthenia gravis, III, 208.

**Guanidines**, II, 63.

**Guanidoacetic acid**, effect of, on liver-lipins in rats, III, 755.

**isoGuanine**, spectrum of, absorption, ultra-violet, I, 386.

**Guanyldihydrometanicotine**, and its salts, II, 384.

**Guavas**, antiscorbutic value of, III, 702.

**Guinea-pigs**, dietary essentials for, III, 703.  
virus disease of, III, 560.

***a-d-a-Guloheptopyranose***, and ***a-d-a-bromo-***  
**acetates**, II, 80.

***d-a-Guloheptose methyl 1:2-orthoacetate tetra-***  
**acetate**, II, 80.

**Gum**, artificial antigens specific for, III, 720.  
fruit tree, protective properties of, for colloidal sols, I, 61.  
plant, chemistry of, II, 166.

**Gums**, hyperplasia of, from dilantin sodium, III, 925.

**Gum acacia**, effect of, on nephrotic oedema, III, 290.

**Gutta-percha**, crystal structure of, I, 260.

**Gymnosporangium**, germination and staining of basidia in, III, 73.

**Gynecology**, disinfection in, III, 336.  
endocrinology in, III, 453.  
hormone therapy in, III, 388.  
methyltestosterone in, oral administration of, III, 606.  
oestrogens in, III, 523.  
peripheral circulation in, test for, III, 204.  
serum-lipase significance in, III, 292.  
testosterone propionate used in, III, 815.  
treatment in, with androgens, III, 690.

**Gypsum**, crystal structure of, and weinschenkite, I, 319.

## H.

**Hackmanite**, Magnet Core, Arkansas, I, 252.

**Hæmagglutinins**, effect on, of estrone, III, 811.

**Hæmalum**, acid, formula for, III, 570.

**Hæmangioendothelioma**, liver. See under Liver diseases.

**Hæmangioma**, facial, and intercranial lesion. See Weber-Dimitri disease.  
of vertebra. See under Vertebrae.

**Hæmatemesis**, blood-urea-nitrogen after, prognosis by, III, 608.  
in peptic ulcer, electrocardiograph changes after, III, 439.  
treatment of, with blood transfusion, III, 193.

**Hæmatin**. See Ferrihæmate.

**Hæmatite**, micaceous, martite in, in Virginia, I, 220.  
origin of, at Steeprock Lake, Ontario, I, 160.

**Hæmatocrit tube**, balancing rack for, III, 662.  
sealed, III, 795.

**Hæmatoglucobilin**, dimethyl ester, II, 382.

**Hæmatology**, II, 952.

**Hæmatoma**, urobilinuria in, explanation of, III, 732.

**Hæmatopoiesis**, induced, in anæmic rabbits, III, 661.

**Hæmin**, structure of, II, 35.

**Hæmins**, intermediate compounds between, and bile pigments, II, 289.

**Hæmochromatosis**, cancer of liver in, III, 536.  
liver necrosis in, III, 319.

**Hæmoconcentration**. See Erythrocytosis.

**Hæmocyanins**, crystallisation of, by means of colloids, III, 846.

**Hæmoglobin**, compound of, with nitrosobenzene, II, 42.  
concentration of, in blood of man, III, 193.  
in relation to red cell density, III, 873.  
crystalline, guinea-pig's, III, 510.  
denaturation of, III, 573.  
detection of, III, 193.  
with undiluted reduced blood, III, 10.  
determination in, of histidine, with 3:4-dichlorobenzenesulphonic acid, in man, horse, and sheep, III, 874.  
determination of, acid and alkali hæmatin methods of, III, 873.  
photo-electrically, III, 367.  
equilibrium of, with oxygen in urea solution, III, 736.  
formation of, effect of ascorbic acid, iron, protein, and vitamin-B complex on, in man, III, 828.  
iron in, absorption of, III, 661.  
level of, in pregnancy, III, 87.  
metabolism of, III, 289.  
muscle; dielectric properties of, III, 554.  
oxidation-reduction potential of, mixed with ethyl hydroperoxide, I, 268.  
mixed with methæmoglobin, in urea solution, III, 736.  
plasma-proteins and, interrelation, production, and utilisation of, III, 573.  
radioactive iron from, neutralisation of, to form new hæmoglobin, III, 729.  
X-ray structure of, III, 639.  
regeneration of, in anæmic trout fed liver and fly maggots, III, 87.  
salt solution of, for perfusion, III, 510.

**Hæmoglobinometers**, standardisation of, III, 796.

**Hæmoglobinometry**, III, 732.

**Hæmoglobinuria**, acute, massive, III, 461.  
March, III, 367.

**Hæmolysins**, III, 498.

**Hæmolysis**, acceleration of, III, 171.  
by formaldehyde, III, 794.  
measurement of, III, 265.

**Hæmophilia**, classification of, III, 873.  
condition like, production of, in heparinised mice, III, 663.  
in newborn, fibrinasthenia as cause of, III, 195.

***Hæmophilus gallinarum***, C growth factor for, III, 781.

***Hæmophilus influenzae***, isolation of, medium for, III, 493.

***Hæmophilus parainfluenzae***, nicotinamide-containing nutrients for, III, 647.

***Hæmophilus pertussis***, antigenic properties of, III, 941.  
preparation of hyperimmune human serum against, III, 347.  
toxicity of washings from, for mice, III, 853.

**Hæmopoiesis**, in lead poisoning, III, 730.

**Hæmopoietic diseases**. See under Diseases.

**Hæmoptysis**, tuberculous. See under Tuberculosis.

**Hæmorrhage**, antepartum, III, 137.  
blood-pressure restoration after, by renin activator, III, 879.  
body water distribution after, III, 575.  
cerebral, origin of, in experimental animals, III, 877.  
control of, in *Eimeria tenella* infected chicks when protected by vitamin-K, III, 369.  
due to oestrogen and progesterone dosage in castrated macaques, III, 132.  
duodenal and stomach, treatment of, III, 894.  
effect of, on red cell size and distribution, III, 729.  
exsanguinating, life-saving power of "safe" universal donor blood in, III, 794.  
gastric. See under Stomach.

**gastro-intestinal**, with hereditary pseudo-hæmophilia, III, 90.

**hepatic**, in stillborn and newborn infants, III, 318.  
prevention of, by cystine and choline, in rats, III, 897.

**menopausal**, treatment of, with radium, uterine cancer after, III, 152.

**obstetric**, treatment of, with blood transfusion, III, 869.

**renal humoral mechanism in**, homeostatic rôle of, III, 898.

**renin-like substance in blood after**, III, 371.

**retinal**. See under Eyes, retina of.

**shock and**, III, 663.

**time of**, cutaneous, III, 11.  
lymph time, and clot resistance in man, III, 664.

**traumatic**, sub-dural, in newborn, III, 110.  
treatment of, with pooled serum, III, 10.  
with rabbit thrombin, III, 89.

**Hæmorrhagic diathesis**. See Disease, hæmorrhagic, and Hæmophilia.

**Hæmorrhagic disease**. See Disease, hæmorrhagic, and Hæmophilia.

**Hæmotricarboximide**, optically active, from chlorophyll, II, 33.

**Hafnium separation**:-  
separation of, from zirconium, by ferrocyanide method, I, 341.

**Hair**, ball of, in stomach, III, 393.  
colour of, effect of hormones on, in rats, III, 601.  
cuticle of, structure of, III, 432.  
determination in, of arsenic, III, 280.  
dystrophy of, hereditary, III, 186.  
follicle, pigment morphogenesis in, of mice, III, 506.  
growth of, in relation to endocrines in rats, III, 592.  
human, mineral constituents of, III, 612.  
loss of, in adrenalectomised rats, III, 120.  
in fat-free and lactoflavin deficient diets, III, 909.  
mid-dorsal whorl of, in Australian, III, 660.  
red. See Erythrotrichia.

**tensile strength of**, III, 322.

**Halides**, effect of, on ascorbic acid oxidation, III, 329.  
inorganic, electric moments of, in dioxan, I, 234.

**Halisteresis**, in mammalian ear, reversal of, III, 226.

**Halitosis**, false and true, III, 608.  
production of, III, 693.

**Hallucinoses**, alcoholic, acute, treatment of, hypertonic saline in, III, 675.

**Haloform reaction**, II, 314.

**Halogens**, diamagnetism of, I, 200.

**Halogen hydrides**, action of, on tetrahydrofurans, II, 107.  
addition of, to halogenated  $\alpha$ -oxides, II, 295.  
electronic structure and stability of, I, 317.  
elimination of, from alkyl halides of high mol. wt., II, 342.

**Halogenation of fatty acids**, II, 346.

**Halogeno-acids**, addition of, to olefines, peroxide effect in, II, 70.

- $\alpha$ -Halogeno-acids**, rate of ammonolysis of, I, 25.  
 **$\alpha$ -Halogeno-acylpeptides**, rates of ammonolysis of, I, 25.  
**Hammer disease**, pneumatic. See Arteritis obliterans, traumatic.  
**Hamsters**, black coat colour inheritance in, III, 82.  
**Hands**, circulation in, effect of drugs on, III, 801.  
 palm patterns of, III, 674.  
**Harmaline**, action of, on stomach movements of rabbits, III, 708.  
**Harmine**, action of, on stomach movements of rabbits, III, 708.  
**Hashish**, Egyptian, essential oil from, II, 202.  
**Hassall's bodies**. See under Thymus.  
***Hastorius arenarius***, male of, III, 606.  
**Hautmaulwurkrankheit**. See Dermatitis linearis migrans.  
**Hay fever**, *Alternaria* specificity in, III, 71.  
 plants producing, of South United States, III, 499.  
 ragweed, treatment of, with pollen extracts, III, 499.  
 treatment of, blocking antibody of, III, 356.  
 cutaneous, III, 179.  
 with pollen extracts, III, 71.  
**Haze**, atmospheric, optics of, I, 44, 196.  
**Head**, annelid, regeneration of, bilateral symmetry of, III, 507.  
 in digestive tube absence, III, 507.  
 cranio-cerebral injuries to, coup-contrecoup mechanism of, III, 740.  
 holder for operations on, III, 723.  
 injuries to, acute, electroencephalogram in, III, 740.  
 effect of serum in, III, 289.  
 meningitis after, III, 740.  
 malformation of, in mongoloid deficiency, III, 566.  
 See also Brain and Skull.  
**Headache**, endocrine aspects of, III, 220.  
 idiopathic, treatment of, with chondroitin, III, 110.  
 mechanism and treatment of, III, 18.  
 pathogenesis of, sinus changes in, during barometric chamber training and on high-altitude flights, III, 206.  
 vascular, treatment of, with histamine, III, 674.  
**Health**, and diet, in relation to defence, III, 37.  
**Hearing**, III, 520.  
 aids to, III, 520, 683.  
 conservation of, III, 520.  
 function of, olive lesions in relation to, III, 212.  
 impaired, treatment of, with prostigmine, III, 227.  
 mathematical biophysics of, in relation to perception of musical tones, III, 592.  
 protection of, III, 226.  
 standards for, in military services and industry, III, 226.  
 tests of, audiometer evaluation of, III, 683.  
 testing of, for aviation, III, 520.  
 useful, loss of, percentage estimation in, III, 683.  
 See also Audition, Deafness, Ears, etc.  
**Heart**, abnormality in, congenital, with partial situs inversus, III, 866.  
 action on, of aneurin chloride, in frogs, III, 153.  
 of anoxia and exercise, III, 666.  
 of *L*-ascorbic acid, III, 911.  
 of cholesterol in frogs and turtles, III, 800.  
 of papaverine in dogs, III, 709.  
 of X-rays in rats, III, 800.  
 of sodium evipan, III, 482.  
 of unsaturated lactones in frogs, III, 709.  
 of veratrine in mammals, III, 709.  
 aged, cardiac vibrations in, III, 13.  
 "Anitschkow myocyte" in, in relation to rheumatic inflammations, III, 203.  
 atrioventricular nodal rhythm in, III, 95.  
 auricles, fibrillation of, III, 202, 801.  
 inhibition of, by procaine and other substances, III, 877.  
 treatment of, with quinidine, III, 709.  
 fibrillation and flutter of, after myocardial infarction, *P-R* interval prolongation in, III, 439.  
**Heart**, auricles, flutter in, III, 95, 801.  
 left, drainage of coronary sinus into, III, 577.  
 right, blood pressure in, III, 734.  
 foetal, model of, crossing caval blood streams in, III, 578.  
 standstill of, III, 666.  
 auricles and ventricles, contraction sequence at different surface regions on, in dogs, III, 294.  
 auriculo-ventricular node in, development of, in bovine embryos, III, 80.  
 beat of,  $p_H$  and origin of, III, 94.  
 block of, associated with Cheyne-Stokes respiration, effect of drugs on, III, 95.  
 bundle-branch, prognosis in, III, 95.  
 in gelding, III, 295.  
 incomplete, due to vagal effect, III, 801.  
 intraventricular, including bundle branch block, III, 202.  
 calcium deposition in, in rats, III, 373.  
 classic work on, III, 184.  
 cold-blooded, effect on, of digoxin, and its relation to digitalis action mechanism, III, 50.  
 of quinidine, III, 923.  
 conducting system of, disturbances in, aetiology of, III, 877.  
 conducting tissue, specialised, in golden hamsters, III, 733.  
 contusion, electrocardiography in, III, 439.  
 death from, III, 13.  
 denervated, acceleration of, due to acetylcholine, effect of adrenal demedullation on, III, 49.  
 sensitisation of, to adrenaline, III, 229.  
 depression of, by mercurial diuretics, III, 551.  
 diastole of, sounds during, III, 577.  
 eels', anaerobic metabolism of, III, 331.  
 oxygen consumption of, perfused with Ringer's solution, III, 295.  
 electrical and mechanical behaviour of, effect of direct-current stimulation on, in oysters, III, 94.  
 electrical field and excitation of, spread of, III, 201.  
 endothelioma of, III, 467.  
 energetics of, effect of resistance-load and input-load on, in mammals, III, 577.  
 enlargement of, idiopathic, in infants and children, III, 440.  
 fibroblasts of, action of nucleic acid on, in mice, III, 758.  
 foetal, acceleration in, progressive, III, 800.  
 arrhythmias of, III, 295.  
 effect on, of exsanguination, in chicks, III, 800.  
 eutherian, posterior caval channel in, III, 429.  
 murmur of, recording of, III, 201.  
 pulsation of, effects of *L*-tyrosine and *L*-phenylalanine on, in chicks, III, 439.  
 frogs', action on, of dog's brain tissue, III, 295.  
 function and size of, III, 801.  
 gallop rhythm in, III, 95.  
 glucosides acting on. See Glucosides, cardiac.  
 glycogen in, after partial hepatectomy, III, 157.  
 in frogs, III, 200.  
 human, permanent preservation of, III, 658.  
 hypertrophy of, congenital, idiopathic, III, 577.  
 coronary bed capacity in, III, 295.  
 production of, III, 13.  
 in myxoedema, III, 115.  
 in sickle-cell anaemia, III, 440.  
 in syphilitic aortic valvulitis and rheumatic heart disease, III, 512.  
 in uremia, III, 801.  
 infarction of, *QRS* complex in, *M*- and *W*-like deformation of, III, 201.  
 induced by unusual effort, III, 877.  
 innervation of, in birds, III, 300.  
 isolated, effect on, of *L*-ascorbic acid, in frogs, III, 665.  
 lesions of, produced by potassium-deficient diet, III, 537.  
 resembling Aschoff bodies in mice, III, 203.  
 massage of, III, 734.  
**Heart**, mitral stenosis in, cerebral embolism in, III, 512.  
 murmurs of, III, 439.  
 measurement of, instrument for, III, 439.  
 murmurs, sounds, and arrhythmias of, phonograph records of, III, 201.  
 muscle of. See Muscle, cardiac.  
 myxoma of, III, 467.  
 outline of, changes in, after insulin shock therapy in schizophrenia, III, 439.  
 output of, effect on, of antonon and lacarnol, III, 201.  
 of venous blood, III, 200.  
 measurement of, ballistocardiogram and direct Flick method in, III, 800.  
 by acetylene, III, 665.  
 carbon dioxide method for, III, 801.  
 ox, phospholipin from, III, 495.  
 phospholipin from, serologically active, from ox, III, 577.  
 pressor effects on, of renin and angiotonin, III, 205.  
 proprioceptive reflex in, III, 876.  
 pulmonary vein drainage into right side of, III, 658.  
 Purkinje fibre lesions of, due to potassium deficiency in calves, III, 578.  
 rate of, autonomic nervous regulation of, in walking and running, III, 295.  
 in relation to diving ability of seals, III, 577, 800.  
 reactions in, potential reactions and time factors in, III, 201.  
 roentgenkymography of, III, 371.  
 roentgenology of, in thyrotoxicosis, III, 877.  
 signs of, in rheumatic infection in children, III, 666.  
 soldier's, III, 13.  
 stab and gunshot wounds of, electrocardiographic changes in, III, 439.  
 systole of, electrical and mechanical, III, 201.  
 trilocular, batrial, with mitral valve atresia, III, 281.  
 vascularity decrease in, in man, between third and sixth decades, III, 99.  
 ventricles, action on, of cocarboxylase and thiamin, in frogs, III, 665.  
 contraction of, in relation to intraventricular pressure rise, in turtles, III, 95.  
 failure of, due to hypertension, III, 202.  
 fibrillation of, after coronary occlusion, III, 95.  
 effect of papaverine hydrochloride on, III, 411.  
 initiation analysis of, by electrography, III, 512.  
 records of, III, 372.  
 threshold of, effect of adrenaline, papaverine, and quinidine on, III, 769.  
 measurement of, and effect of procaine, III, 95.  
 ventricular filling of, rôle of auricles in, in tortoises, III, 371.  
 vitamin- $B_1$  deficiency conditions in, X-ray diagnosis of, III, 877.  
 weight of, in normal men, III, 371.  
**Heart diseases**, III, 96.  
 beri-beri, III, 910.  
 alcoholic, III, 910.  
 pulmonary embolism in, III, 878.  
 blood-pyruvic acid in, III, 800.  
 cardiac necrosis and, III, 96.  
 congenital, III, 506.  
 and electrocardiogram, III, 201.  
 death due to, in infants, III, 202.  
 during pregnancy, III, 13.  
 manifesting arrhythmia *in utero*, III, 372.  
 venous-arterial shunt calculation in, III, 97.  
 failure, blood-pyruvic acid in, III, 12.  
 congestive, blood and interstitial fluid volumes, cardiac output, serum-protein, and kidney function during, III, 666.  
 impaired renal excretion of sodium chloride in, III, 820.  
 in children with rheumatic fever, III, 203.  
 prognosis of, III, 96.  
 treatment of, mercurial diuretic in, III, 550.

- Heart diseases**, failure, congestive, and angina pectoris, treatment of, by thyroidectomy, III, 96.  
 from pulmonary hypertension and spinal deformity, III, 734.  
 hypertensive, effect on, of digitalis, III, 709.  
 left ventricular, pathological physiology of, III, 801.  
 oedema formation in, hydrostatic pressure in capillaries during, III, 579.  
 shock due to, III, 578.  
 hypertensive, III, 580.  
 in children, ratio of cardiovascular malformations to, III, 877.  
 in pregnancy, pathology of, III, 202.  
 in rheumatic infection in children, III, 666.  
 infarction in, III, 578.  
 pregnancy interruption in, III, 137.  
 prognosis of, electrocardiogram in, III, 877.  
 pulmonary embolism and, III, 96.  
 pulmonary infarction in, III, 512.  
 treatment of, with lanatoside-*C*, III, 923.  
 with vitamin-*B*<sub>1</sub>, III, 700.  
 tumours, diagnosis of, antemortem, III, 617.
- Heat**, conduction of, I, 317.  
 dynamics of, I, 320.  
 latent, measurement of, by gas-current method, I, 356.  
 Nernst's theorem of, I, 412.  
 production of, calculation of, from insensible loss of weight, III, 834.  
 in animals, minimum base value of, III, 330.  
 radiant, absorption of, by spherical particles, I, 9, 196.  
 regulation of, in animals, III, 338.  
 requirement of, for full-term and premature infants, III, 326.  
 specific, as function of temperature, I, 356.  
 atomic weight and, I, 49.  
 effect on, of altitude, I, 356.  
 Newton's law of cooling and, I, 200.  
 of crystals, I, 318.  
 of gases, I, 232.  
 equations for, I, 356.  
 of solids, theory of, I, 196.
- Heat capacity**, of organic vapours, I, 292.
- Heat of combustion**, I, 100.
- Heat of hydrogenation**, catalytic, in solution, I, 330.
- Heat of reaction**, in liquid ammonia, I, 63.  
 organic, III, 774.
- Heat of solution**, in liquid ammonia, I, 63.  
 of trichlorides, I, 330.
- Heat of vaporisation**, latent, I, 88.
- Heberden's nodes**, hereditary, III, 185.
- Heifers**, lead poisoning in, III, 413.
- Heliophyllite**, formula and grouping of, I, 380.
- Helium**, atoms, energy of, and their related ions, I, 349.  
 opposed axial orientation of, I, 161.  
 distribution of radioactivity and, in rocks, I, 121.  
 in nebulae, I, 222.  
 in prevention of explosions of anaesthetic mixtures, III, 632.  
 in rocks, I, 216.  
 inflammability of mixtures of ethyl ether, oxygen, and, I, 102.  
 low-temperature properties of, I, 139.  
 neutron scattering in, I, 223.  
 range-velocity relation for fission fragments in, I, 128.  
 spectrum of, I, 125.  
 line, I, 253.  
 Zeeman effect in, I, 189.  
 thermal diffusion in mixtures of hydrogen and, I, 15.
- Helium I**, spectrum of, I, 221.
- Helium II**, heat transfer in, I, 14.
- Helix pomatia***, blood constituents of, III, 570.
- Hellebore**, American. See *Veratrum viride*.
- Helminths**, species-specificity of, III, 562.
- Helminthosporium***, catenarin from metabolism of, II, 24.
- Helvellyn**, geology of, I, 347.
- Hemangiomas**, sclerosing, of central nervous system, III, 467.
- Hemianopia**, bitemporal, in pregnancy, III, 225.  
 foveal, during dark adaptation in patients with temporal lobe tumours, III, 674.  
 homonymous, due to carbon monoxide poisoning, III, 682.
- Hemidesmus indicus***, resins of, III, 278.
- Hemiplegia**, blindness and, after cerebral embolism, III, 225.  
 evolution of, in infancy, III, 218.
- Hens**, energy and gaseous metabolism in, effect of temperature on, III, 834.  
 heritable differences in conformation of, III, 385.  
 laying, effect of iron on ovaries of, III, 827.  
 leg-weakness in, on ascorbic acid-free diet, III, 473.  
 white Leghorn, age of, relation of production and egg weight to, III, 385.  
 See also Chickens, Cocks, Fowls, *Gallus domesticus*, and Poultry.
- n*-Hendecan- $\beta$ -ol**,  $\alpha$ -nitro-, II, 295.
- n*-Hendecan- $\gamma$ -ol**,  $\beta$ -nitro-, II, 295.
- n*-Hendecan- $\delta$ -ol**,  $\gamma$ -nitro-, II, 295.
- n*-Hendecan- $\epsilon$ -ol**,  $\delta$ -nitro-, II, 295.
- Heparin**, administration of, III, 798.  
 analysis of, III, 663.  
 anticoagulant potency of, III, 195.  
 effect of, on capillary permeability and inflammation in rabbits, III, 195.  
 excretion of, in urine, after injection, III, 145.  
 from mammalian tissues, comparison of, III, 798.  
 liberation of, by trypsin, III, 369.  
 preparations of, III, 574.  
 thrombosis and, III, 873.  
 treatment with, and sulphathiazole, of cavernous sinus thrombosis, III, 544.  
 of endocarditis, III, 663, 919.  
 of retinal vein thrombosis, III, 663, 873.  
 of vascular thrombosis, III, 369.
- Hepatitis**. See under Liver diseases.
- Hepatolenticular degeneration**, liver function in, III, 673.
- Hepatoma**. See Liver, tumours of.
- Hepene**, and its derivatives, III, 755.
- cyclo*Hepta-amylose**, II, 397.
- cyclo*Heptadecene**, cryoscopic constant of, II, 178.
- cyclo*Heptadecenoic acid**, methyl ester, II, 163.
- 2- $\alpha$ - $\Delta^6$ -Heptadecenyl-1:3:4-thiodiazole**, 5-amino-, and its derivatives, II, 290.
- Heptadecic acid**,  $\pi$ -bromo-, and  $\pi$ -iodo-, II, 344.
- Heptaldehyde**, hydrogenation of, catalytically, I, 333.  
 influence of, on pregnancy in rats, III, 402.  
 sodium bisulphite compound, effect of, on mammary gland tumours in mice, III, 37.
- Heptamethyl-6-galactosidogalactose**, II, 219.
- Heptanes**, isomeric, heats of combustion and formation of, I, 63.  
 isomerisation of, free energies and equilibria of, I, 175.  
 heats of, I, 175.
- n*-Heptane- $\gamma$ -diol**, 8-nitro-, II, 389.
- cyclo*Heptanediol osmate**, II, 256.
- Heptanetetra-carboxylic acid**, and its methyl ester, II, 40.
- 2-Heptathieryl**, II, 61.
- $\Delta^6$ -Heptene**, addition of sulphur dioxide to, I, 301.
- $\Delta^7$ -Heptenoic acid**, II, 363.
- cyclo*Heptenothiazole**, 2-amino-, hydrochloride, II, 209.
- $\alpha$ -Heptenoyl-lævulic acid**, methyl ester, II, 300.
- Heptine**. See Heptinene.
- $\Delta^6$ -Heptinene**,  $\alpha$ -chloro-, spectrum of, Raman, I, 227.
- Heptinenyl radical**, migration of, II, 295.
- Heptioic acid**, preparation of, from heptaldehyde, II, 345.
- Heptioic acid**,  $\zeta$ -bromo-, and  $\zeta$ -iodo-, and their methyl esters, II, 344.
- Heptylactic acid**, methyl ester, II, 300.
- 2-*n*-Heptylresorcinol**, and its dimethyl ether, II, 308.
- 2-*N*<sup>4</sup>-*n*-Heptylsulphanilamido-5-*n*-butyl-4-thiazolone**, II, 120.
- 2-*N*<sup>4</sup>-*n*-Heptylsulphanilamido-5-ethyl-4-thiazolone**, II, 120.
- Heptyl alcohol**, preparation of, from heptaldehyde, II, 345.
- n*-Heptylamines**, preparation of, and their derivatives and toxicity, II, 188.  
 preparation and toxicity of, III, 484.
- $\beta$ -*n*-Heptylaminoethyl alcohol**, and its picrate, II, 394.
- p*-*n*-Heptylbenzoic acid**, II, 258.
- n*-Heptyl-*d*-glucoside**, and its tetra-acetate, II, 218.
- $\beta$ -*n*-Heptylglucoside**, II, 351.
- 5'-*n*-Heptylhexahydrocannabinol**, II, 236.
- p*-*n*-Heptyloxybenzoic acid**,  $\beta$ -*n*-butylaminoethyl ester, hydrochloride, II, 404.
- p*-*n*-Heptylphenyl methyl ketone**, and its derivatives, II, 258.
- 2-*n*-Heptylresorcinol**, II, 308.
- 5'-*n*-Heptyl-3':4':5':6'-tetrahydrocannabinol**, II, 236.
- 4-*n*-Heptylthiazole**, 2-amino-, and its 2-*p*-acetylbenzenesulphonamide, II, 153.
- Heracleum sphondylium***, collenchyma cells in, fine structure of, III, 190.
- Herapathite**, colloidal, polarising light filters for, I, 280.
- Hereditary syndromes**, genetic classification of, in man, III, 5.
- Hermaphroditism**, gonads in, III, 452.  
 in rats, III, 566.  
 male, gout and, III, 892.
- $\psi$ -Hermaphroditism**, pregnanediol glycuronidate excretion in, III, 136.
- Hernia**, diaphragmatic, III, 3.  
 duodenal, right, III, 789.  
 inguinal, parietal coverings and related structures of, III, 1.  
 umbilical, in infantile myxoedema, treatment of, with thyroid, III, 381.
- Herpes**, virus, effect of, on inoculated mice, III, 178.
- Herpes labialis**, due to sulphapyridine and T.A.B. therapy, III, 259.
- Herpes simplex**, after artificial fever therapy, III, 713.
- Herpes zoster**, lesions from, III, 354.
- Herrings**, Pacific. See *Clupea pallasii*.  
 vertebral number of, in British Columbia, III, 505.
- Hesperidin**, chemistry of, and use as source of vitamin-*P*, III, 474.
- Hesperitin**, 7:3'-diacetate, II, 149.
- Hetaerolite**, I, 345.
- Heteratisine**, and its hydrochloride, II, 336.
- Heterocyclic compounds**, II, 108, 201.  
 containing nitrogen, II, 425.  
 spectra of, absorption, ultra-violet, I, 386.  
 dipole moments and resonance in, I, 289.  
 four-membered, synthesis of, II, 271.  
 introduction of amino-groups into nucleus in, II, 169.  
 polynuclear, condensed, II, 331.  
 syntheses of, II, 394.
- Heteropoly-acids**, inorganic, structure, properties, and formation of, I, 275.  
 structure of, I, 229.  
 structure and properties of, I, 22.
- Heterovitamin-B<sub>1</sub>**, action of, on micro-organisms, III, 175.
- Hetisine**, and its derivatives, II, 336.
- Hevea brasiliensis***, phosphatides of, III, 655.
- cyclo*Hexa-amylose**, II, 397.
- Hexa-arylethanes**, dissociation of, II, 399.
- Hexadecane- $\alpha$ - $\beta$ -diol**, and its derivatives, II, 295.
- Hexadecane- $\gamma$ ' $\chi$ -tetraone**, II, 300.
- n*-Hexadecane- $\alpha$  $\beta$ -tricarboxylic acid**, II, 278.
- $\Delta^6$ -Hexadecene- $\alpha$  $\omega$ -dicarboxylic acid**. See Homocitric acid.
- $\Delta^6$ -Hexadecene- $\alpha$  $\pi$ -dicarboxylic acids**, and their dimethyl esters, II, 393.
- $\Delta^6$ -Hexadecenoic acid**, *o*-hydroxy-, II, 392.
- $\Delta^6$ -Hexadecenoic acid**, methyl ester, II, 163.
- $\Delta^6$ -Hexadecenoic acid**, *o*-cyano-, ethyl ester, *o*-hydroxy-, and its acetyl derivative, ethyl ester, and *o*-iodo-, ethyl ester, II, 346.
- Hexadecic acid**, *o*-bromo-, and *o*-iodo-, and their methyl esters, II, 344.
- eo*-dihydroxy-**, and its diformate, II, 392.
- bio*-trihydroxy-**, ethyl ester, II, 346.

- $\alpha$ - and  $\beta$ -Hexadecic acids, *thi*-dibromo-, and *thi*-dihydroxy-, and their dimethyl esters, II, 393.
- Hexadecylamine hydrochloride, electrical conductivity of aqueous solutions of, I, 299.
- n*-Hexadecylmalonic acid, dibutyl ester, II, 247.
- n*-Hexadecylsuccinic acid, and its derivatives, II, 278.
- $\Delta^{1,3}$ -cycloHexadiene, decomposition of, I, 400.
- Hexaethoxymethylmelamine, II, 207.
- 2:4:6:2':4':6'-Hexaethylbenzil, 3:3'-*di*- and 3:5:3':5'-*tetra*-bromo-, II, 91.
- cis*- and *trans*-2:4:6:2':4':6'-Hexaethylstilbene- $\alpha\beta$ -diols, and their diacetates, II, 91.
- Hexahedrites, Chilean, I, 220.
- Hexacyclohexoxydisiloxane, II, 122.
- Hexahydrobenzoic acid, 1-hydroxy-, ester hydrochlorides, II, 237.
- cis*-Hexahydrobenzoic acid, 4-amino-, use of, in mol. wt. determinations, I, 358.
- Hexahydrobenzylmethylamine, hydrochloride, II, 306.
- Hexahydrocumarin, II, 409.
- Hexahydrooxyanisoin, and its derivatives, II, 362.
- Hexahydro-6:13-diphenylpentacene, II, 321.
- Hexahydrofarnesyl nitrile, II, 421.
- Hexahydromandelic acid,  $\beta$ -piperidinoethyl ester, hydrochloride, II, 237.
- 1:2:3:5:6:7'-Hexahydronaphthalene, 1:5-*di*hydroxy-, II, 90.
- Hexahydroisophthalic acid, and its derivatives, II, 53.
- Hexahydrosoladodiene, II, 157.
- Hexamethoxybenzene, II, 10.
- Hexamethoxymethylmelamine, II, 206.
- Hexamethylacetone, reaction of, with sodium, II, 248.
- Hexamethyltri-aminophenylvinylcarbenium perchlorate, II, 194.
- aa* $\gamma$ -Hexamethyltri-aminotriphenylallene, II, 194.
- 2:4:6:2':4':6'-Hexamethylbenzil, 3:3'-*di*bromo-, II, 91.
- 2:4:6:2':4':6'-Hexamethylbenzoin, 3:3'-*di*bromo-, II, 91.
- $\beta\beta\delta\delta\kappa\kappa$ -Hexamethyl- $\delta\delta$ -*divert.*-butyl-*n*-undecane- $\epsilon\eta$ -dione, II, 349.
- $\beta\beta\zeta\zeta\kappa\kappa$ -Hexamethyl- $\delta\delta$ -*di*-( $\beta'\beta'$ -dimethyl-*n*-propyl)-*n*-undecane- $\epsilon\eta$ -dione, II, 349.
- Hexamethyldisilane, molecular structure of, I, 134.
- Hexamethylenetetramine, crystal structure of, I, 87.
- determination of, II, 244.
- formation and decomposition of, II, 299.
- Hexamethylethane, and its derivatives, II, 70.
- structure of, I, 390.
- cis*- and *trans*-2:4:6:2':4':6'-Hexamethylstilbene- $\beta$ -diols, 3:3'-*di*bromo-, and their diacetates, II, 91.
- $\beta\zeta\kappa\omega$ -Hexamethyl- $\Delta\beta\zeta\kappa\mu\pi\sigma\phi\phi$ -tetracosaoctadiene, II, 126.
- Hexane, conductivity of, effect of cosmic rays on, I, 287.
- Hexanes, isomerisation of, free energies and equilibria of, I, 175.
- heat of, I, 24.
- P-V-T* relations for, I, 167.
- iso*Hexane,  $\beta\beta$ -difluoro-, II, 294.
- cycloHexane, bromination of, II, 69.
- derivatives, monoalkyl, Raman spectra of, I, 258.
- diffraction of X-rays by mixtures of benzene and, I, 263.
- equilibrium of, with propyl alcohols and water, I, 398.
- X-ray study of, and its mixtures with benzene, I, 259.
- spectrum of, Raman, I, 165.
- in mixtures with aniline, I, 315.
- cycloHexane, chloro-, crystals, molecular rotation in, I, 356.
- dodeca- and undeca-fluoro-, II, 84.
- penta-hydroxy-, and its penta-acetate, II, 364.
- cycloHexane series, II, 259, 284.
- cycloHexane-1:1-diacetomethylimide, II, 345.
- n*-Hexane- $\beta\delta$ -diol,  $\gamma$ -nitro-, II, 389.
- cis*- and *trans*-cycloHexane-1:3-diol, benzoates, II, 317.
- n*-Hexane- $\alpha\zeta$ -disulphonic acid, and its *m*-toluidine salt, II, 129.
- cycloHexanesulphonmethyldisulphonimide, II, 297.
- Hexanetetra-carboxylic acid, and its anhydrides and tetramethyl ester, II, 40.
- cycloHexanol, crystals, molecular rotation in, I, 356.
- dipole moment of, in dioxan, I, 387.
- iso*Hexan-8-ol- $\beta$ -one, amine-catalysed dealdolisation of, I, 177.
- dehydration of, I, 366.
- cycloHexanone, crystals, molecular rotation in, I, 356.
- dipole moment of, in dioxan, I, 387.
- cycloHexanone, 3-hydroxy-, II, 317.
- 4-hydroxy-, preparation of, II, 309.
- cycloHexanone series, II, 369.
- cycloHexanone-2-carboxylic-2- $\kappa$ -undecic acid, ethyl ester, II, 283.
- Hexaphenylethane, derivatives, heats of dissociation of, I, 146.
- 5:6:7:12:13:14-Hexaphenyl-5:7:12:14-tetrahydro-pentacene-5:7:12:14-tetraol, II, 321.
- 2-Hexathieryl, and *tetradecabromo*-, II, 61.
- Hexatriene, spectrum of, absorption, I, 134.
- Hexatrienes, preparation of, II, 137.
- $\Delta^6$ -Hexene, addition of sulphur dioxide to, I, 301.
- cycloHexene, condensation of, with halogenobenzenes, II, 353.
- crystals, molecular rotation in, I, 356.
- reaction of, with dibenzoyl peroxide, II, 353.
- cycloHexene glycols, oxidation of, by periodate, I, 243.
- cycloHexene oxide, decomposition of, I, 400.
- cycloHexenealdehydes, action of alkalis on, II, 403.
- $\Delta^2$ -cycloHexene-1:2-diol osmate, II, 256.
- $\Delta^6$ -Hexen- $\alpha$ -ol, and its derivatives, from raspberry oil, II, 246.
- $\Delta^2$ -cycloHexenone 2:4-dinitrophenylhydrazone, II, 172, 317.
- cycloHexenothiazole, II, 274.
- cycloHexenothiazole, 2-amino-, and its hydrochloride, II, 209.
- 2-thiol, II, 274.
- $\Delta^2$ -cycloHexenoylformic acid, 3-cyano-, and its ethyl ester, II, 53.
- $\Delta^2$ -cycloHexenyl methyl peroxide, II, 416.
- $\Delta^1$ -cycloHexenylacetophenone 2:4-dinitrophenylhydrazone, II, 172.
- $\Delta^2$ -cycloHexenyl- $\Delta^2$ -cyclohexene tetrabromide, II, 353.
- $\epsilon$ - $\Delta^1$ -cycloHexenyl- $\Delta^2$ -hexenoic acid, II, 317.
- $\epsilon$ - $\Delta^1$ -cycloHexenylhexoic acid,  $\epsilon$ -hydroxy-, II, 317.
- $\Delta^1$ -cycloHexenyl- $\Delta^1$ -4-methoxycyclohexenyl-acetylene, II, 171.
- Hexine. See Hexinene.
- Hexinenes, spectra of, Raman, I, 227.
- Hexcestral, polynuclear analogues of, III, 523.
- See also  $\gamma\delta$ -Diphenyl-*n*-hexane,  $\gamma\delta$ -*di*-*p*-hydroxy-.
- n*-Hexoic acid, chlorotolyl and tolyl esters, II, 139.
- n*-Hexoic acid,  $\beta\epsilon$ -dibromo-, II, 287.
- dl*-*n*-Hexoic acid,  $\alpha$ :3:5-dinitroamino-,  $\alpha$ -benzoyl derivative, II, 258.
- Hexoylactic acid, methyl ester, II, 300.
- n*-Hexoylcresols, and their chloro-derivatives, II, 139.
- $\alpha$ -Hexoyl-lævulic acid, methyl ester, II, 300.
- 2-*n*-Hexoyl-1-naphthol, and its derivatives, II, 139.
- 2-*n*-Hexoylresorcinol, and its dimethyl ether, II, 308.
- 2- $N^4$ -*n*-Hexoylsulphanilamido-5-*n*-butyl-4-thiazolone, II, 120.
- 2- $N^4$ -*n*-Hexoylsulphanilamido-5-ethyl-4-thiazolone, II, 120.
- Hexuronic acids, identification of, II, 248.
- cycloHexylacetaldehyde, and its derivatives, II, 29.
- cycloHexylamidophosphoric acid, diphenyl ester, II, 281.
- $\beta$ -cycloHexylaminomethyl alcohol, and its picrate, II, 394.
- cycloHexyl-*p*-aminophenylacetic acid, esters, II, 195.
- $\beta$ -cycloHexyl- $\alpha$ -*p*-anisylbutane- $\alpha\beta$ -diol, II, 362.
- $\beta$ -cycloHexyl- $\alpha$ -*p*-anisylbutan- $\alpha$ -one, and its 2:4-dinitrophenylhydrazone, II, 362.
- p*-cycloHexylbenzenesulphonic acid, amide and chloride of, II, 136.
- p*-*n*-Hexylbenzoic acid, II, 258.
- $\beta$ -cycloHexylbutyrolactone,  $\beta$ -hydroxy-, acetate, II, 415.
- $\omega$ -*n*-Hexylcamphene, and its derivatives, II, 266.
- n*-Hexylcresols, isomeric, and their chloro-derivatives, II, 139.
- $\gamma$ -cycloHexylcrotonic acid, and its derivatives, II, 29.
- cycloHexyl- $\beta$ -*p*-diethylaminoethylaminophenyl-acetic acid, methyl ester, and its hydrochloride, II, 195.
- 2-cycloHexyl-2:3-dihydroindole, and its hydrochloride, II, 116.
- 2-cycloHexyl-4:6-di(hydroxymethyl)phenol, II, 358.
- $\delta$ -cycloHexyl- $\beta\delta$ -dimethyl- $\Delta\beta$ -pentene, II, 185.
- $\eta$ -*n*-Hexyldocosane, II, 125, 341.
- $\eta$ -*n*-Hexyleicosane, II, 125.
- 5- $\beta$ -cycloHexylethyl-5-ethylbarbituric acid, II, 151.
- $\beta$ -cycloHexylethyl-*d*-glucoside, and its tetraacetate, II, 218.
- n*-Hexyl-*d*-glucoside tetraacetate, II, 218.
- $\lambda$ -cycloHexylheicosane, II, 125.
- $\epsilon$ -cycloHexyl-*n*-hexacosane, II, 85.
- 5''-*n*-Hexylhexahydrocannabinol, II, 236.
- $\gamma$ -cycloHexylhexane- $\gamma\delta$ -diol, II, 362.
- $\delta$ -cycloHexylhexan- $\gamma$ -one, 2:4-dinitrophenylhydrazone, II, 362.
- $\alpha$ -cycloHexyl- $\gamma$ -( $\beta$ -cyclohexylethyl)hendecane, II, 125.
- 4-*n*-Hexylhydantoin, II, 271.
- $\alpha$ -cycloHexyl- $\gamma$ -1-hydroxycyclohexylpropane, and its 3:5-dinitrobenzoate, II, 309.
- $\alpha$ -cycloHexylidene- $\beta$ -2-dimethylaminomethyl- $\Delta^1$ -cyclohexenylethane, and its hydrochloride, II, 353.
- cycloHexylidene-ethyl bromide, II, 268.
- 2-cycloHexylidene-cyclohexanone, and its derivatives, II, 317.
- $\alpha$ -cycloHexylidene- $\beta$ -1-hydroxy-2-dimethylaminomethylcyclohexylethane, and its acetate, II, 353.
- n*-Hexyldienemalonic acid, diethyl ester, II, 133.
- 1-cycloHexylidenemethyl- $\Delta^{10}$ -octahydronaphthalene-2:3-dicarboxylic anhydride, II, 354.
- $\gamma$ -cycloHexylidenepropene- $\alpha\beta$ -diol arsenite, II, 343.
- 2-cycloHexylindole, II, 116.
- $\beta$ -*n*-cycloHexyl-*N*-methylaminoethyl chloride, II, 224.
- 3-cycloHexyl-5-methylbenzaldehyde, 2-hydroxy-, II, 310.
- 5-cycloHexyl-3-methylbenzaldehyde, 2-hydroxy-, and its derivatives, II, 310.
- 3-cycloHexyl-5-methylbenzyl alcohol, 2-hydroxy-, II, 310.
- $\omega$ -cycloHexylmethylcamphene, and its derivatives, II, 266.
- 3-cycloHexyl-5-methyl-*o*-quinonemethide, II, 310.
- 5-cycloHexyl-3-methyl-*o*-quinonemethide, II, 310.
- 2-*n*-Hexyl-1-naphthol, II, 139.
- cycloHexyl-*p*-nitrophenylacetic acid, and its esters, II, 194.
- 2-cycloHexyloctahydroindole, and its hydrochloride, II, 116.
- p*-Hexyloxybenzoic acid,  $\beta$ -*n*-alkylaminoethyl esters, hydrochlorides, II, 404.
- 5-cycloHexyloxybenzthiazole, 6-nitro-, II, 153.
- p*-*n*-Hexylphenyl methyl ketone, and its derivatives, II, 258.
- 5-cycloHexylisophthalaldehyde, 4-hydroxy-, and its dioxime, II, 358.
- $\gamma$ -cycloHexyl- $\Delta^2$ -propinene,  $\gamma$ -1-hydroxy-, II, 309.
- $\gamma$ -cycloHexyl- $\Delta\beta$ -propinen- $\alpha$ -ol,  $\gamma$ -1-hydroxy-, and its derivatives, II, 309.
- 4-*n*-Hexylpyrimidine, 2-amino-, 2-amino-6-hydroxy-, and 6-chloro-2-amino-, II, 151.
- 2-cycloHexylpyrrolidine, hydrochloride, II, 115.
- 2-cycloHexylpyrrolidine-1-carboxylic acid, ethyl ester, II, 115.
- Hexylresorcinol, treatment with, of pinworm infestation, III, 841.

- 2-*n*-Hexylresorcinol, II, 308.  
 5''-*n*-Hexyl-3':4':5':6'-tetrahydrocannabinol, II, 236.  
*κ-cyclo*Hexylundecic acid, synthesis of, and its derivatives, II, 282.  
 Hibernation, effect of, on eruption and dentine in incisors in squirrels, III, 79.  
 Hibiscetin, and its derivatives, II, 327.  
 Hibiscitrin, II, 327.  
*Hibiscus cannabinus*, flowers, colouring matter of, II, 109.  
*Hibiscus sabdariffa*, flowers, hibiscitrin from, II, 327.  
 Hibsichte, I, 219.  
 Hickory trees, boron content of, III, 862.  
 Higley, Samuel, early American metallurgist, I, 251.  
 Hippocampus, vascular pattern in, III, 18.  
 Hippuric acid, derivatives, ring-substituted, action of hippuricase on, III, 419.  
 excretion rate of, in man, III, 899.  
 formation of, hepatic function and, III, 896.  
 recovery of, from urine, effect of salts on, III, 322.  
 synthesis of, after carbon tetrachloride in rats, III, 927.  
 Hippuric acid, 3:5-diiodo-, derivatives of, II, 283.  
 3:5-diiodo-4-hydroxy-, and its derivatives, II, 283.  
 Hippuricase, action of, on hippuric acid derivatives, III, 419.  
 Hirschsprung's disease, distention in, at high altitudes, III, 394.  
 Hirudin, III, 90.  
 His's bundle, development of, in bovine embryos, III, 80.  
 Histaminase, III, 555.  
 in allergic skin diseases, III, 499.  
 prevention by, of reactions to liver extract injections, III, 661.  
 protection by, against histamine and anaphylactic shock, III, 482.  
 treatment with, of asthma, III, 443.  
 Histamine, action of, on adrenaline dilator effect, III, 513.  
 on eosinophilia in allergic cases, III, 196.  
 bioassay of, III, 632.  
 development of resistance to, in guinea-pigs, III, 165.  
 in blood. See under Blood.  
 in inflammatory lesions, in rabbits, III, 575.  
 iontophoresis, treatment with, of acrocyanosis and Raynaud's disease, III, 928.  
 isolation of, from urine in pregnancy toxæmia, III, 313.  
 liver-. See under Liver.  
 shock from, cervical lymph production during, III, 199.  
 protection against, by histaminase, III, 482.  
 treatment of, with histidine, III, 841.  
 tolerance to, III, 482.  
 treatment with, of anaphylactic shock, III, 721.  
 of atopic dermatoses, III, 412.  
 of Ménière's disease, III, 683.  
 of vascular headache, III, 674.  
 Histamineazoprotein, treatment with, of allergic diseases, III, 499.  
 Histidine, action on, of bromine, II, 32.  
 deamination of, by *Bacillus coli* from rat's skin, III, 270.  
 determination of, colorimetrically, II, 292.  
 in hæmoglobin, with 3:4-dichlorobenzene-sulphonic acid in man, horse, and sheep, III, 874.  
 isolation of, from human pregnancy urine, III, 611.  
 metabolism of. See under Metabolism.  
 preparation of, and its di-3:4-dichlorobenzene-sulphonate, II, 204.  
 substances affecting pregnancy reaction of, III, 313.  
 treatment with, of gastroduodenal ulcers, III, 143.  
 of histamine shock, III, 841.  
 d(+)-Histidine, III, 542.  
 l(-)-Histidine, III, 542.  
 physical properties of, II, 377.  
 Histochemistry, changes in, associated with ageing, III, 582.  
 Histophysiology, III, 7.  
 Histoplasmosis, III, 196.  
 in infancy, III, 510.  
 in mice, III, 940.  
 of Darling, III, 290.  
 skin reactions in, III, 267.  
 systemic, diagnosed before death in guinea-pigs, III, 698.  
 Hog cholera. See Swine fever.  
 Hollandite, I, 345.  
 Holmium, determination of, spectrophotometrically, I, 278.  
 Homarus, heart of, action of acetylcholine on, III, 800.  
 Homeothermy, development of, in birds, III, 462.  
 See also Temperature, body.  
 D-Homoandrostane-3:17:17a-triol, and its derivatives, II, 147.  
 4'-D-Homoandrostene-17a-ol-3:17-dione, and its dioxime, II, 147.  
 Homocamphoric acid, synthesis of, II, 59.  
 Homocholine, esters, II, 301.  
 Homocitric acid, and its ether ester, II, 346.  
 Homocysteine, effect of, on liver-lipins in rats, III, 755.  
 formation from, and serine, of cysteine by rat liver tissue, III, 835.  
 dl-D-Homo-*n*- and -iso-equilenins, and their methyl ethers, II, 105.  
 dl-D-Homo-*n*- and -iso-equilenin-17-carboxylic acids, methyl esters, II, 105.  
 β-Homocitric acid. See Pyridine-3-acetic acid.  
 Homonorcarnphoric acid, and its diethyl ester, II, 369.  
 D-Homoestradiol, and its diacetate, II, 200.  
 D-Homoestrone, and its derivatives, II, 200.  
 Homopantothenic acid. See β-γ'-Dimethylvaleramidopropionic acid, β-β'-dihydroxy-.  
 Homopantoyltaurine. See β-γ'-Dimethylvaleramidoethanesulphonic acid, β-β'-dihydroxy-, sodium salt.  
 4<sup>5:17</sup>-ω-Homopregnadiene-3(β):21(α):22-triol, II, 367.  
 21:22-dimethylmethylene ether 3-acetate, II, 368.  
 4<sup>5:17</sup>-ω-Homopregnadiene-3(β):21(β):22-triol, II, 367.  
 21:22-dimethylmethylene ether 3-acetate, II, 368.  
 4<sup>5:17:21</sup>-ω-Homopregnatrien-3(β)-ol acetate, II, 367.  
 4<sup>5</sup>-ω-Homopregnene-3(β):17(β):20(β):21(β):22-pentaol, and its derivatives, II, 367, 368.  
 β-Homoquinolinic acid, and its dimethyl ester, II, 114.  
 Homosexuality, hormonal explanation of, III, 452.  
 Homovanillic acid, synthesis of, II, 283.  
 Homoveratrylamide, *N*-benzenesulphonyl derivative, II, 57.  
 Honey, effect of, on calcium retention in infants, III, 326.  
 Hookworms. See under Worms.  
 Hormidium, cell-wall structure in, III, 72.  
 culture of, in presence of colchicine, III, 425.  
 Hormidium floccidum, ultra-violet irradiation of, III, 416.  
 Hormones, adrenal cortex. See under Adrenal cortex.  
 adrenocortical and corticotropic, administration of, increased liver-arginase on, III, 687.  
 adrenotropic, assay and extraction of, from urine, III, 597.  
 ageing and, III, 886.  
 chromatophoretropic, assay of, III, 27.  
 corpus luteum. See under Corpus luteum.  
 cortical, syntheses of substitutes for, II, 260.  
 crystalline, absorption of pellets of, III, 115.  
 diabetogenic, origin of, in dogfish, III, 230.  
 effect of, on carbohydrate level in chicks, III, 746.  
 on skeleton in mice, guinea-pigs, and rats, III, 185.  
 effect of, on skin colour, in catfish, III, 229.  
 on survival of adrenalectomised mice, III, 229.  
 on uterus of rhesus monkey, III, 600.  
 fertility augmentation in sheep by, III, 813.  
 follicle-stimulating, augmentative, gonadotropic effect of, on rats, III, 891.  
 See also Thylakentrin.  
 follicular. See under Ovary.  
 gonadotropic, action of, on height and bone development in sexually undeveloped boys, III, 29.  
 on testicular metabolism, III, 522.  
 action on, of pregnancy urine, III, 239.  
 activity of, effect of ascorbic acid on, III, 522.  
 administration of, response of intra-ocular prostatic implants in rabbits to, III, 384.  
 carbohydrates of, III, 522.  
 chorionic, test for, in saliva of pregnancy, III, 455.  
 determination of, in urine during menstrual cycle, III, 691.  
 excretion of, in pregnant women with mammary cancer, III, 603.  
 in relation to tumours of testicles, III, 126.  
 function of, effect of thyroid on, III, 310.  
 of pregnancy urine, III, 454.  
 secretion of, effect of oestradiol on, III, 28.  
 treatment with, of sterility of endocrine origin, III, 454.  
 of undescended testicles, III, 29.  
 gonadotropic and oestrogenic, permeability of placenta to, III, 814.  
 relation between, and climacteric symptoms, III, 388.  
 gonadotropic and sex, effect of, on blood picture in rats, III, 239.  
 on urogenital systems of terrapins, III, 813.  
 growth, effect of, on costochondral junction of rat rib, III, 565.  
 on mammary glands of hypophysectomised rats, III, 138.  
 production of epithelial growths in human cervical mucosa by, III, 386.  
 response to, of hypophysectomised rats in relation to food, III, 687.  
 growth inhibition by, III, 891.  
 in crustacea, III, 450.  
 intercellular, III, 849.  
 interstitial-cell stimulating, standardisation of, III, 810.  
 See also Metakentrin.  
 lactogenic, activity of, effect of thiol compounds on, III, 384.  
 extraction and assay of, in post-partum urine, III, 687.  
 reduction of, by thiols, III, 384.  
 luteinising, release of, from pituitary by acetylcholine-like substance of hypothalamic region, III, 384.  
 melanophore-dispersing, assay of, during pituitary development in chicks, III, 310.  
 oestrogenic, concentration of, in blood-corpuscles and serum, III, 12.  
 determination of, in blood in premenstrual asthma, III, 688.  
 in urine, III, 311.  
 in genesis of cancers and tumours, III, 823.  
 in hæmophilic and normal urine, III, 388.  
 in ovarian cysts, III, 249.  
 parathyroid and thyroid response parallelism to, III, 593.  
 pellets of, in cholesterol, absorption rate of, III, 380.  
 pituitary. See under Pituitary.  
 plant growth, proliferation-promoting, III, 785.  
 preparations of, treatment with, of peptic ulcers, III, 894.  
 sex, II, 102, 104, 200, 264, 265.  
 adrenal cortex and, III, 887.  
 analogues of, synthesis of, II, 176.  
 and related substances, III, 149.  
 effect of, in mitosis, and their relationship to tumours, III, 249.  
 on blood in rats, III, 370.

- Hormones**, sex, effect of, on callus formation, III, 893.  
 on embryonic sexual development in rats, III, 812.  
 on embryonic urogenital sinus, parenterally injected during gestation in mice, III, 689.  
 on hair colour of rats, III, 601.  
 on liver-glycogen, III, 31.  
 on mammary cancer, III, 903.  
 on mating behaviour of chicks, III, 455.  
 on nipples of guinea-pigs, III, 601.  
 on phosphatase of rat femurs, III, 361.  
 on skin, III, 128.  
 on transplanted neoplasms, III, 324.  
 on vas deferens, III, 893.  
 enzymes and, III, 341.  
 excretion of, and hormone therapy, III, 388.  
 female, effect of, on seminal fluid volume in man, III, 601.  
 therapeutic use of, III, 525.  
 female and male, antagonism and synergism of, III, 891.  
**Food and Drug Administration** activities in field of, III, 311.  
 growth and, III, 688.  
 in pregnancy urine, after castration, III, 236.  
 male, treatment with, III, 391.  
 percutaneous application of, in rats and rabbits, III, 890.  
 relation of, to adrenal and thyroid hormones, III, 305.  
 steroids and, II, 231, 232, 367.  
 synthetic, moderation of sex development in salamanders by, III, 749.  
 tablet implantation of, in man, III, 600.  
 treatment with, of angina pectoris and coronary artery disease, III, 440.  
 of diabetes, III, 891.  
 zoological specificity in reaction to, III, 452.  
 steroid, anaesthesia with. See under Anaesthesia.  
 anaesthetic, antagonism between, and cardiazol, III, 770.  
 metabolism of, III, 749.  
 intermediary, III, 28.  
 pubertal increase in accessory sex organ response to, III, 690.  
 synthesis of, II, 365.  
 transformation of, into methyl homologues of cyclopentenophenanthrene, II, 365.  
 thyroid. See under Thyroid.  
 thyrotropic, effect of, on blood-cholesterol of thyroidectomised rabbits, III, 597.  
 on reproductive system of adrenal-ectomised, normal, and thyroidectomised rats, III, 597.  
 exophthalmos and myopathy induced by, III, 521.  
 organ hypertrophy and decreased growth rate in rats due to, III, 522.  
 treatment with, III, 380.  
 and sex hormone excretion, III, 388.  
 in gynaecology, III, 388.  
 of cyclical stomatitis and vulvitis, III, 232.  
 of male sterility, III, 390.  
 of pre-eclampsia, III, 388.  
 of testicular atrophy, III, 127.  
 urine, pregnancy. See under Urine.  
**Hornblende**, extinction angles in, I, 411.  
**Horses**, blood of. See under Blood.  
 toxicity of phenothiazine to, III, 844.  
**Hospitals**, lighting in, in war time, III, 681.  
**Hugo Müller lecture**, III, 425.  
**Humic acid**, crystal structure of, I, 136.  
**Humidity** of air, measurement of, I, 249.  
**Humus**, colloid-chemical properties of, I, 143.  
**Hunneanine**, and its ethyl ether, II, 429.  
**Hunneania fumariæfolia**, alkaloids of, II, 429.  
**Hurler's disease**. See Dysostosis multiplex.  
**Hyaluronic acid**, from human joint fluid, hydrolysis of, by enzymes *in vivo*, III, 935.  
**Hybrids**, *Fundulus-Scomber*, pigment inheritance in, III, 82.  
 vigour in, chromosome degeneration in relation to, III, 431.  
**Hydantoins**, II, 379.  
 synthesis of, II, 425.  
 with tetrahydropyranil substituent, II, 419.  
**Hydatid cyst**, anaphylactic shock and hemorrhage with, III, 946.  
**Hydatiform mole**, III, 133.  
 blood-gonadotropin in, III, 134.  
 intravessel, and chorio-epithelioma in cardinal ligament, III, 536.  
**Hydnocarpic acid**, ethyl ester, physical constants of, I, 388.  
**N<sup>1</sup>-Hydnocarpylsulphanilamide**, II, 307.  
**Hydnocarpylsulphonic acid**, amide and sodium salt, II, 307.  
**Hydnocarpylisothiocarbamide hydrobromide**, II, 391.  
**Hydnocarpylthiourethane**, II, 391.  
**Hydra**, fate of ectoderm and endoderm of, cultured independently, III, 5.  
**Hydrastases**, effect on, of vitamins, III, 776.  
**Hydration** of unsaturated compounds, I, 371.  
**r-Hydratropaldehyde mandelohydrazone**, II, 18.  
**Hydrazine**, determination of, I, 182.  
 hydrogen bonds in, I, 131.  
 production of, by arcs in nitrogen-hydrogen mixtures or ammonia, I, 273.  
 sulphate, solubility of, I, 360.  
**Hydrazine series**, II, 4.  
**Hydrazinium difluoride**, crystal structure of, I, 319.  
**Hydrazobenzene dihydrobromide and dihydriodide**, II, 280.  
**Hydrazoic acid**. See Azoimide.  
**Hydrazonium bases**, quaternary, thermal decomposition of, II, 4.  
**Hydrindane-1-carboxylic acid**, and its derivatives, II, 406.  
**1-Hydrindanyl acetoxymethyl ketone**, II, 406.  
 **$\beta$ -1-Hydrindanyl- $\Delta^2\beta$ -butenolide**, II, 406.  
**Hydrobiotite**, relation of vermiculite to, I, 219.  
**Hydrobromic acid**. See under Bromine.  
**Hydrocarbons**, action on, of sulphur at high pressure, II, 125.  
 alicyclic, acid strengths of, I, 145.  
 physical properties of, I, 195.  
 monoalicyclic, molal volumes of, at 20°, I, 195.  
 aliphatic, action of chlorine and sulphur dioxide on, in ultra-violet light, II, 296.  
 heats of combustion of, I, 205.  
 molal volumes of, at m.p., I, 195.  
 nomographs for, I, 228.  
 reaction of, with chlorine and sulphur dioxide in ultra-violet light, II, 245.  
 saturated, branched-chain, vibrational spectra of, I, 288.  
 spectra of, absorption, near infra-red, I, 193.  
 Raman, I, 226.  
 aromatic, action on, of aluminium chloride, II, 136.  
 aryl-substituted, absorption spectra of, I, 40.  
 polarisation of fluorescence of, in solution, I, 82.  
 polycyclic, II, 7.  
 autoxidation of, II, 403, 416.  
 branched-chain, monolayers of, I, 264.  
 carcinogenic. See under Carcinogenics.  
 chlorinated, poisoning by. See under Poisoning.  
 conductivity of, and reaction rates, I, 316.  
 monocyclic, catalytic isomerisation of, in presence of molybdenum disulphide, II, 220.  
 polycyclic, fluorescence of, oxygen quenching of, I, 226.  
 solubilities of, I, 170.  
 dielectric properties of, I, 149.  
 ethylenic, oxidation of, kinetics of, I, 269.  
 gaseous, chlorination of, II, 296.  
 monohalogeno-derivatives, b.p. and structure of, I, 232.  
 high-mol. wt., and their intermediates, II, 84.  
 halogenation of, II, 342.  
 properties and synthesis of, II, 125.  
 higher, II, 341.  
 inflammation of, regions of, I, 207.  
 light, thermodynamics of, I, 321.  
 low-boiling, physical constants of, I, 357.  
 mixed, phase equilibria in, I, 292, 368.  
 non-carcinogenic, excretion of, in bile, III, 251.  
 lymphoid tissue changes in mice treated with, III, 36.  
**Hydrocarbons**, isoolefinic and paraffinic, synthesis of, II, 185.  
 open-chain, dehydrogenation of, in presence of carbon dioxide, II, 213.  
 oxidation of, I, 149.  
 at low temperatures, II, 245.  
 by bacteria, III, 718.  
 paraffin, aromatisation of, catalytically, II, 252.  
 critical states of binary mixtures of, I, 358.  
 liquid, mol. vol. of, I, 353.  
 physical properties of, I, 50, 357.  
 reaction of, with oxalyl chloride, II, 215.  
 reactivity of, II, 245.  
 straight-chain, thermal decomposition of, I, 176.  
 viscosity of solutions of derivatives of, I, 293.  
 polymethylenic, heats of combustion of, I, 205.  
 pyrogenic syntheses of, II, 342.  
 specific dispersion of, I, 353.  
 spectra of, flame, chilled, I, 257.  
 in atomic oxygen, I, 6.  
 infra-red, I, 313.  
 vibrational, I, 193.  
 synthesis of, Fischer-Tropsch, I, 68.  
 unsaturated, autoxidation of, in presence of didiphenylene-ethylene, II, 49.  
 reaction of, with oxalyl chloride, II, 215.  
 reduction of, at dropping mercury cathodes, I, 400.  
 vapour pressure of, I, 357.  
**Hydrocephalus**, internal, chronic, due to Arnold-Chiari cerebellar malformation, III, 303.  
 intra-uterine, X-ray diagnosis of, III, 220.  
 non-obstructive, treatment of, by endoscopic cauterisation of choroid plexuses, III, 675.  
**Hydrochloric acid**. See under Chlorine.  
**Hydrocyanic acid**. See under Cyanogen.  
**Hydrofluoric acid**. See under Fluorine.  
**Hydrogen**, absorption markings due to, on sun's disc, I, 309.  
 adsorption of, by metals, I, 94.  
 on thorium dioxide, photo-activation of, I, 395.  
 angular distribution of current from a point in, I, 161.  
 atoms, associating effect of, II, 63, 89, 366.  
 breakdown potentials in, I, 8.  
 combination of, with oxygen, between explosion limits, I, 101.  
 in presence of carbon monoxide, I, 300.  
 compressibility of mixtures of, with nitrogen and carbon dioxide, I, 90.  
 diffusion and thermal diffusion of deuterium or helium and, I, 15.  
 exchange between deuterium and, in heterogeneous mixtures, I, 103.  
 on charcoal, I, 270.  
 explosion limit of mixtures of oxygen and, I, 66.  
 flames of deuterium and, I, 147.  
 flame speed of, maximum, I, 101.  
 high rotational levels and partition function for, I, 257.  
 in stellar atmospheres, I, 221.  
 in sun, I, 221.  
 ions, determination of, I, 338.  
 in unbuffered solutions, I, 338.  
 temperature correction in, I, 269.  
 fast, action of, on lithium chloride, I, 78.  
 loss of energy of, in traversing gases, I, 381.  
 molecules, proton production by electron collisions in, I, 381.  
 ortho- and para-, heats of adsorption of, I, 170.  
 overvoltage of, I, 268.  
 on lead, I, 101.  
 para-, catalytic conversion of, on nickel, palladium, and platinum, I, 403.  
 testing of organic compound structure with, I, 166.  
 para-ortho transformation of, I, 106, 270.  
 polarisability and internuclear distance in, I, 351.  
 proton mobility in mixtures of, with palladium, I, 31.



- Hydrogen**, reaction of, with cyanogen, at high temperatures, I, 400.  
with oxygen, I, 68, 242, 369.  
with pyrex glass, I, 110.  
solubility of, in liquid ammonia, nomograph for, I, 54.  
mixed with nitrogen, in liquid carbon dioxide, I, 235.  
solutions of, concentrated, at high pressures, I, 90.  
spark ignition of mixtures of oxygen and, I, 66.  
spectrum of, I, 125, 224.  
band, in hydrogen peroxide and hydrazine, I, 131.  
ultra-violet, I, 257.  
symmetrically-placed, molecular dissymmetry due to, II, 253.  
transport mechanism of, in animal tissue, III, 318.
- Hydrogen bromide**. See Hydrobromic acid under Bromine.
- chloride**. See Hydrochloric acid under Chlorine.
- cyanide**. See Hydrocyanic acid under Cyanogen.
- fluoride**. See Hydrofluoric acid under Fluorine.
- halides**. See Halogen hydrides.
- peroxide**, crystal structure of additive compound of carbamide and, I, 87.  
decomposition of, by sodium nitroprusside, I, 178.  
catalytic, by beryllium iodide hydrosols, I, 333.  
transition stages of, I, 106.  
detection of, with luminol, I, 153, 277.  
hydrogen bonds in, I, 131.  
reaction of, with amalgams and oxygen, I, 305.  
with potassium permanganate, I, 376.  
spectrum of, infra-red, I, 257.  
selenide, surface reaction of, on zinc oxide, I, 70.  
transformations in mixed crystals of hydrogen deuterium selenide, deuterium selenide, and, I, 205.
- sulphide**, generator for, I, 379.  
production of, use of cysteine and cystine by rat liver with, III, 408.  
reaction of, with chloramine-*T*, I, 181.  
with permanganates, I, 70.  
with sulphites, I, 210.
- Hydrogen determination**—  
determination of, combustion apparatus for, II, 338.  
in organic compounds, II, 243.
- Hydrogen electrodes**. See under Electrodes.
- Hydrogen linkings**, formation of, I, 165.  
studied by Raman effect, I, 227, 315.  
in crystals, structure and thermal properties associated with, I, 260.  
model for, I, 318.  
rôle of, in condensed monomolecular layers, I, 264.
- Hydrogen-carbon linkings**. See Carbon-hydrogen linkings.
- Hydrogen-clay colloidal solutions**, electrochemical properties of, I, 265.
- Hydrogen-nitrogen linkings**, spectrum of, absorption, I, 164.
- Hydrogen-sulphur linkings**, I, 196.
- Hydrogenase**. See Reductase.
- Hydrogenation**, biochemical, II, 17; III, 258.  
catalytic. See Catalytic hydrogenation.  
micro-, apparatus for, I, 119; II, 67.  
of gases, I, 301.  
of organic compounds with zinc-nickel couple, II, 213.
- Hydrohetaerolite**, I, 345.
- Hydrolysis**, I, 243.  
*n*- and *iso*-Hydromesitoins, and their diacetates, II, 171.
- Hydronephrosis**, secondary to aberrant renal vessels, treatment of, III, 320.
- Hydrophthalmia**, III, 113.
- Hydrosulphosol**, nature of, and its toxicity to embryonic tissues, III, 630.
- Hydrouracil**, 5:5-dibromo-4-hydroxy-, reaction of, with barbituric and malonic acids, II, 32.  
with keten, II, 272.
- Hydroxides**, double, I, 274.  
of di- and tri-valent metals, I, 306.
- Hydroxo-aquocobaltic bisdiguanidinium hydroxide**, and its salts, II, 251.
- $\alpha$ -Hydroxy-acids**, fatty, *p*-nitrobenzyl, phenacyl, and *p*-phenylphenacyl esters, II, 74.
- polyHydroxy-acids**, study of, with dropping mercury electrodes, I, 269.
- Hydroxy-compounds**, organic, complex metallic co-ordinated compounds of, I, 40.
- Hydroxyl groups**, determination of, in organic compounds, II, 68.  
spectrum of, in infra-red absorption spectra of organic compounds, I, 193.  
isotope effect in, I, 131.
- Hydroxyl ions**, overvoltage of, I, 268.
- Hydroxylamine**, oxidation products of, effect of catalysis on, I, 302.  
reactions of, I, 333.  
reduction by, of silver salts, I, 401.
- Hydroxyllysine**, dissociation constants of, I, 297.
- Hydroxysulphonic acids**, glucosides of, and their esters, II, 133.
- Hygiene**, industrial, in national defence, III, 338.
- Hygrometers**, electric, I, 342.  
optical, I, 282.
- Hyla regilla***, eggs of, temperature tolerance of, III, 385.  
tadpoles of, tissue specificity establishment in, III, 791.
- Hymenoptera**, sex ratio in, and function of environment, III, 533.
- Hyperadrenalism**, experimental, effect of, on genitals of male rats, III, 239.
- Hyperbilirubinæmia** in newborn, III, 199.
- Hypercholesterolaemia**, III, 450.  
dietary, III, 93.
- Hyperemesis**, and vomiting in late pregnancy, pathology of, III, 137.
- Hyperemesis gravidarum**, aetiology and treatment of, III, 137.  
high vitamin therapy in, III, 454.  
ocular complications in, III, 304.  
treatment of, with glucose-insulin, III, 230.
- Hypergenitalism**, in mongolian idiot, III, 391.
- Hyperglycæmia**, adrenaline, effect on, of esmodil, III, 769.  
alimentary, modification of, by fat ingestion, III, 294.  
due to ingesting fatty acids and liver-glycogens, III, 294.  
esmodil, III, 708.
- Hypericin**, II, 123.
- Hypericum perforatum***, hypericin from, II, 123.
- Hyperinsulinism**, artificial and spontaneous, III, 596.  
organic, metabolism in, III, 383, 596.  
with cerebral lesions due to pancreatic adenoma, III, 451.
- Hyperkinetic syndromes**, complex, anatomy and clinical studies of, III, 738.
- Hyperleukocytosis**, in malignancy, III, 904.
- Hyperlipæmia**, III, 293.
- Hypermicroscopy**, hot-stage, with electron microscopes, I, 308.
- Hyperol**, crystal structure of, I, 87.
- Hyperostosis**, of jaw and skull bones, III, 78.
- Hyperostosis frontalis interna**, incidence of, in mental cases, III, 789.
- Hyperparathyroidism**, during acromegaly, III, 808.  
in diseases, test for, III, 306.  
in nephritis, III, 595.  
nephrolithiasis in, III, 887.  
renal, with artery calcification in infancy, III, 521.
- Hyperplasia**, adrenal cortex. See under Adrenal cortex.  
bone. See under Bone.
- Hypertensin**, vasoconstrictor effect of, inhibitory action of amine-oxidase and tyrosinase on, III, 374.
- Hypertension**, anterior poliomyelitis and, III, 441.
- Hypertension**, arterial, III, 803.  
nature of, III, 374.  
produced by angiotonin, III, 99.  
renal blood flow in, III, 735.  
symptom of intracranial tumours, III, 669.  
treatment of, with tyrosinase preparations, III, 878.  
arterial pulse pressure in relation to arterio-venous oxygen difference in, III, 374.  
arteriolar changes of skeletal muscle in, III, 441.  
associated with pyelonephritis in children, III, 670.  
associated with unilateral atrophic pyelonephritis, III, 205.  
blood in, effect of, on arterial rings, III, 441.  
blood pressure and incidence of, effect of parity on, III, 441.  
blood-pressure-reducing property of kidney extracts in, III, 668.  
chronic, in rats, III, 803.  
pregnancy in patients with, III, 878.  
classification of, III, 99.  
effect on, of oxidases and pressor amines, III, 734.  
experimental, III, 98.  
effect of amine oxidase preparation on, III, 669.  
effect of pregnancy on, in rabbits, III, 100.  
neuro-hypophysis in relation to, III, 374.  
from moderator nerve section, in relation to kidneys, III, 374.  
in bilateral renal infarction, III, 878.  
kidney and, III, 99, 441.  
nephrectomy in, III, 514.  
neurogenic, sympathectomy and, body fluid changes in, III, 670.  
neurogenic and renal, sympathetic nervous system in, III, 100.  
persistent, bilateral renal disease in, III, 803.  
production of, renal blood pressure and blood flow in relation to, III, 580.  
renal, aortic atheroma in rabbits with, III, 669.  
effect on, of high protein diets on, III, 802.  
of hog renin, in dogs, III, 205.  
in children, III, 514.  
mechanism of, III, 99, 373.  
produced by dopa, III, 320.  
renal blood flow in, III, 100, 580.  
effect of splanchnicectomy on, III, 374.  
renal aspects of, III, 14.  
renal vascular bed capacity in, III, 297.  
retinal arteriovenous nicking in, III, 514.  
treatment of, III, 878.  
surgically, III, 14, 670.  
with thiocyanate, III, 14, 670.  
See also Blood pressure and Hypotension.
- Hyperthelia**, bilateral, in guinea-pig, III, 866.
- Hyperthyroidism**, III, 887.  
basal metabolism and clinical signs in, III, 227.  
biochemical derangements in, III, 744.  
bone-calcium during, III, 381.  
complicated by diabetes, treatment of, III, 118.  
diabetes and, III, 381.  
effect on, of oestrogens, in rats, III, 130.  
experimental, action of potassium and sodium in, III, 305.  
co-enzyme I content of tissues in, III, 305.  
effect on, of X-rays, III, 807.  
in adolescent, III, 684.  
pantothenic acid and vitamin-B<sub>6</sub> requirements during, III, 594.  
peripheral vascular response to exercise in, III, 228.  
serum-magnesium in, ultrafilterable, III, 799.  
therapeutic studies in, III, 305.  
treatment of, with oestrogens, III, 684.
- Hyperventilation**, effects of, and relation to aviation medicine, III, 803.  
syndrome of, III, 15.
- Hypervitaminosis-A**, in man, III, 252.
- Hypervitaminosis-D**, absence of, in mice irradiated with ultra-violet rays, III, 845.
- Hypnosis**, sodium evipan, effect on, of therapeutic agents, III, 549.

- Hypnotics**, action of, III, 549.  
on blood-sugar-regulating centres, III, 483.  
amide, II, 77, 150.  
dialkylmalonylguanidines, III, 549.  
propazone, III, 51.
- Hypobalbinæmia**, relation of, to cedema of malaria, III, 291.
- Hypobromous acid**. See under Bromine.
- Hypochloræmia**, blood-sugar in, effect of adrenaline on, III, 521.
- Hypochlorous acid**. See under Chlorine.
- Hypoglycæmia**, acute, in newly born pigs, III, 11.  
insulin. See under Insulin.  
spontaneous, causation and diagnostic difficulties of, III, 294.
- Hypoglycæmic shock**. See under Shock.
- Hypogonadism**, heat output in, during testosterone treatment, III, 606.  
symptoms of, treatment of, with diethylstilbæstrol, III, 689.  
treatment of, with testosterone propionate and methyltestosterone, III, 127.
- Hypoparathyroidism**, idiopathic, convulsive mechanism in, III, 684.  
treatment of, with dihydrotachysterol, III, 381.
- ψ-Hypoparathyroidism**, III, 808.
- Hypophosphites**. See under Phosphorus.
- Hypophysectomy**, blood-sugar in, III, 383.  
blood-sugar and glycogen stores after, effect of thyroxine on, in rats, III, 686.  
effect of, at mid-pregnancy in mouse, III, 751.  
on blood in rats, III, 198.  
on liver-glycogen and iodine of thyroid, III, 889.  
on rat's ability to remove blood-fructose, III, 747.  
in chick embryo, III, 4.  
liver fats after, in rats on high-carbohydrate and -fat diets, III, 686.  
milk secretion in, in pregnant mice, III, 123.  
response to growth hormone after, in relation to food in rats, III, 687.  
serum-inorganic phosphate and "alkaline" activity in, in rats, III, 511.
- Hypophysis**. See Pituitary.
- Hypopituitarism**, amenorrhœa in, treatment of, III, 690.  
treatment of, with sodium chloride, III, 122.
- Hypoplasia**, genital, female, III, 232.
- Hypoproteinæmia**, blood volume and serum-proteins in, effect of saline infusions on, in dogs, III, 798.  
chronic, due to diet, serum-albumin regeneration in, III, 874.  
in surgical diseases, relation of serum-protein to hepatic function and ascitic fluid trans-fusion influence in, III, 798.  
treatment of, with protein hydrolysate, III, 197.  
wound healing in, delayed, III, 874.
- Hypoprothrombinæmia**, avitaminosis-K in relation to, in man, III, 194.  
experimental, III, 292.  
from 3:3'-methylenebis-(4-hydroxycoumarin), III, 798.  
idiopathic, III, 195.  
in anæmia, III, 511.  
in newborn, III, 195.
- Hyposulphites**. See under Sulphur.
- Hypotension**, blood volume in, effect of posture on, III, 10.  
postural, associated with sympathetic nervous system dysfunction, III, 580.
- Hypothalamus**, lesions in, blood-urea changes after, III, 377.  
physiology and pathology of, in relation to regulation of autonomic functions, III, 303.  
"secretory granules," III, 108.
- Hypothermia**, III, 552.
- Hypothyroidism**, III, 450.  
blood and metabolism in, effect of serum on, III, 305.  
blood-lipin partition in, in childhood, III, 12.  
creatinuria in infants and children with, III, 684.  
effect of, on ovarian function in guinea-pigs, III, 129.
- Hypothyroidism**, experimental, brain, kidneys, and heart in, chemistry of, III, 381.  
in childhood, III, 116, 594.  
sensory and motor centre states in cases of, III, 450.  
sterol balance in, III, 684.
- Hypovitaminosis**, in pregnancy, causation of, III, 907.  
vitamin-C in relation to, III, 701.
- Hypovitaminosis-C**, urine test for, III, 763.
- Hypoxanthine**, determination of, II, 244.  
effect of, on growth of *Phycomyces*, III, 642.
- Hyrax syriaca*, diencephalon of, III, 446.
- Hysterectomy**, effect of, on corpora lutea of pregnant rabbits, III, 134.
- Hysteresis**, I, 321.
- Hysteria**, canine, diet deficiency and, III, 618.  
dog biscuits in relation to, III, 618.
- Hysterography**, external, III, 235.
- Hysterosalpingography**, III, 312, 605.  
combined with uterus insufflation, III, 140.  
technique of, III, 312.  
viscous contrast medium for, III, 892.
- I.
- Ice**, plasticity of, I, 291.
- Ichthammol**, effect of, histology of, III, 843.
- Ichthyopus glutinosus*, stapedial connexions in, III, 789.
- Icterus**. See Jaundice.
- Idiocy**, amaurotic, familial, anatomy of, III, 24.  
congenital form of, III, 741.  
infantile, III, 115.  
juvenile, III, 886.  
Tay-Sachs, identity of, with Niemann-Pick disease, III, 886.
- Idocrase**, from Manchester, New Hampshire, I, 219.
- i*-Idosaccharic acid, and its derivatives, II, 310.
- dl*-Idosaccharic acid, salts and derivatives of, II, 364.
- Ileocolostomy**, with exclusion for non-specific ileitis, III, 607.
- Ileum**, absorption from, of water and salts, in dogs, rate of, III, 143.
- Illness**. See Disease.
- Imidodisulphonic acids**, metal salts, magnetochemistry of, I, 304.
- Imidoporphyrin**, structure of, II, 274.
- Iminazoles**. See Glyoxalines.
- 2-Iminobarbituric acids**, hypnotic action of, II, 237; III, 549.
- Iminodicarboxylic acids**, unsymmetrical, cyclisation of ureido-derivatives of, II, 425.
- αα'*-Iminodicarboxylic acids, and their derivatives, action on, of enzymes, III, 847.
- αα'*-Iminodipropionitrile, III, 847.
- αα'*-Iminodipropionic acids, stereoisomeric, II, 278.
- β*-Iminonitriles, hydrogenation of, II, 168.
- Immunisation**, cutaneous, antibody formation in, III, 274.  
in Royal Canadian Air Force, III, 561.  
immunity, effect on, of prontosil, III, 918.  
indicated by positive tuberculin reaction, III, 177.  
production of, by cutaneous immunogens, III, 274.
- Immunochemistry**, III, 271.
- Immunology**, technique in, III, 651.
- Impatiens balsamina*, seeds, dormancy in, III, 275.
- Impetigo**, contagious, treatment of, with sulphathiazole, III, 628.  
treatment of, with sulphathiazole, III, 919.  
with sulphathiazole ointment, III, 767.  
with sulphonamides, III, 919.
- Impotence**, treatment of, with gonadotropin and testosterone, III, 606.  
with testosterone propionate, III, 390.
- Incineration**, micro-, cytology in, III, 793.
- Incisor**. See under Teeth.
- Indandione**. See Diketohydrindene.
- Indane-1-carboxylic acid**, and its amide, II, 406.
- 1- and 2-Indanols**, and their derivatives, II, 256.
- 1-Indanyl acetoxymethyl ketone**, II, 406.
- Indazole**, 4:5- and 5:6-diamino-, 4:7-dibromo-5:6-dihydroxy-, and 5:6-di- and 4:5:6:7-tetrahydroxy-, and their derivatives, II, 273.
- Indazole series**, II, 272.
- 4:7-Indazolequinone**, 5:6-dihydroxy-, II, 273.
- 4:5-Indazolylamino-6-methoxy-2-methylquinoline**, II, 379.
- Indene**, determination of, by bromination, II, 44.
- Indians**, blood groups among, III, 82.
- Indicators**, acid-base, sodium salt of quinizarin-6-sulphonic acid as, I, 276.  
action of, I, 247.  
adsorption, action of, I, 71.  
for iodate-iodine monochloride method of analysis, I, 182.  
new, for nitrogen determination, II, 211.  
oxidimetric, ruthenium dipyriddy as, I, 183.
- Indigo**, determination of, I, 279.
- Indigotin**, 5:5'-dinitro-, II, 17.
- Indium**, I, 66, 70, 298.  
electrical conductivity of, I, 13.  
spectrum of, radiofrequency, and its nuclear spin, I, 285.
- Indium alloys**, analysis of, I, 410.
- Indium salts**, I, 335.
- Indium** arsenide, antimonide, and phosphide, I, 305.  
*tribromide* and *triiodide*, hydrolysis constants of solutions of, I, 298.  
hydroxide, hydrous, precipitation of, I, 66, 70.
- Indole**, compounds of, with quinones, II, 377.  
derivatives, hydrogenation of, II, 115.  
formation of, by *Bacillus coli*, inhibition of, III, 646.
- Indoles**, Friedel-Crafts acylation of, II, 377.  
thio-derivatives of, II, 423.
- Indole polysulphides**, II, 423.
- Indole-2:3-dicarboxylhydrazide**, and its acetyl derivative, II, 119.
- 8-Indolo[3:2:1-de]acrid-8-one**, and its oxime, II, 122.
- Indoluria**, in rheumatoid arthritis, III, 321.
- Indolylacetic acid**, effect of, and of boron on plant growth, III, 424.
- Indolylacrylic acid**, antibacterial action of, III, 344.
- ms*-3-Indolylbenzoin, II, 64.
- Indones**, II, 364.
- Indoxyl compounds**, determination of, in urine, III, 694.
- Infants**, asphyxia in, prevention of, "head-up" position in, III, 207.  
basal metabolism of, III, 330.  
breast-fed, vitamin-B<sub>1</sub> deficiency symptoms in, III, 539.  
effect on, of prenatal nutrition, III, 467.  
feeding of, III, 904.  
root vegetables as antiscorbutics in, III, 255.  
full-term and premature, caloric requirement of, III, 326.  
feeding of, with desiccated beef, III, 38.  
magnesium balance in, III, 405.  
newborn, blood chemistry changes and shock in, III, 576.  
cuboid bone in, development of centre for, III, 77.  
effect of diet of, on prothrombin index, III, 194.  
hæmatological standards for, III, 434.  
intrapulmonary pressures in, III, 582.  
with anomalous umbilical vein, symposium, and viscera transposition, III, 725.
- newborn and stillborn**, hepatic hæmorrhage in, III, 318.
- planar response development in**, III, 107.
- premature**, acid-base balance in, III, 369.  
ariboflavinosis in, III, 701.  
ascorbic acid requirement of, effect of diet on, III, 763.  
heat loss of, calorimeter for measurement of, III, 914.  
mortality of, III, 361.  
physiological handicaps of, III, 899.  
respiration of, III, 879.  
urine secretion by, III, 532.  
urea clearance of, III, 820.

- Infants**, wasting, arrested lung growth in, III, 207.  
weight of, at birth, cephalometry in, III, 281.
- Infantilism**, pterygo-nuchal, III, 362.  
sexual, of hypothyroid origin, III, 744.
- Infection**, air-borne, III, 938.  
allergy and resistance to, III, 70.  
anaerobic, treatment of, with sulphapyridine and serum, III, 161.  
anorectal, treatment of, with suppositories, III, 839.  
bacterial, chemotherapy of, II, 375.  
treatment of, with neosalvarsan, III, 770.  
with sulphapyrimidine, III, 410.  
droplet-borne, prevention of, by spraying, III, 344.  
effect of, on carbohydrate tolerance, III, 542.  
effect on, of nutritional deficiency, III, 469.  
focal, III, 645.  
irradiation in, III, 929.  
mycotic, iontophoresis of copper sulphate in, III, 413.  
pyogenic, treatment of, ultra-violet blood irradiation in, III, 481.  
sinus, use of intranasal silver picrate in, III, 481.  
treatment of, with rays, III, 486.
- Infectious diseases**. See under Diseases.
- Infertility**. See Sterility.
- Inflammation**, capillary permeability increase in, III, 13.  
diabetes and, III, 158, 797.  
histamine in lesions of, in rabbits, III, 575.  
rheumatic, "Anitschkow myocyte" in relation to, III, 203.  
treatment of, with X-rays, III, 56, 486, 638, 929.
- Influenza**, III, 496.  
distemper vaccine against, III, 273.  
epidemic, III, 68, 273.  
immunisation against, at Letchworth, III, 561.  
nasal secretions in, inactivating viruses, III, 496.  
susceptibility to, in relation to serum antibodies, III, 178.  
A type, antibodies in human serum after, III, 856.  
immunisation against, of man, III, 68.  
vaccine against, III, 178.
- virus**, adsorption of, by red cells, III, 649.  
affinity of, to Newcastle disease virus, III, 856.  
air-borne, protection of mice against, by propylene glycol vapour, III, 708.  
concentration of, from allantoic fluid, III, 943.  
cultivation of, III, 352.  
detection of, in throat washings with hamsters, III, 496.  
growth of, in chick embryos, III, 561.  
human, resistance of mice to, III, 496.  
susceptibility of kangaroo rats to, III, 496.  
inhomogeneity of, III, 178.  
inoculation by inhalation of, III, 497.  
isolation of, from faeces of inoculated mice, III, 496.  
red-cell agglutination by allantoic fluid of embryos infected with, III, 720.  
red-cell agglutination by antibodies in, III, 650.  
resistance of, to drying, III, 352.
- virus A**, air-borne, action on, of propylene glycol aerosols, III, 497.  
culture of, in roller tubes, III, 561.  
infection by, of cynomolgus monkeys, III, 561.  
precipitation of, by protamine, III, 497.
- virus B**, immunisation with, III, 649.  
isolated in California epidemic, III, 496.
- Infusions**, intravenous, large, effect of, on body fluids, III, 731.
- Infusion fluids**, pyrogen in, test for, III, 663.
- Injections**, sterile, preparation of, I, 214.
- Ink**, eradicator for, dermatitis due to, III, 337.  
Indian, lymphatic transport of, effect of X-rays on, III, 930.
- Inorganic compounds**, classification of, crystallo-chemical, I, 355.
- Inositol**, in brain-phosphatide, III, 585.  
in chick diet, III, 42.  
oxidation of, by nitric acid, II, 176.  
specificity of, III, 834.  
treatment with, of spectacle eye in rats, III, 472.
- mesoInositol**, configuration of, and its derivatives, II, 13, 310.
- Inosose**, and its derivatives, II, 13, 363.  
configuration of, II, 364.
- Insanity**, manic-depressive, inheritance of, III, 19.
- Insects**, biotin as growth factor for, III, 540.  
colour vision of, III, 448.  
cuticle in, chemistry of, III, 247.  
colour of, physiology and ecology of, III, 323.  
electron microscopy of, III, 793.  
emanations from, asthma from, III, 71.  
growth factors for, III, 830.  
metamorphosis of, antigen structure during, III, 857.  
relation of, to host plants, III, 654.  
survival of, in relation to water loss rate, III, 462.
- Insect viruses**, proteins from, spreading of, III, 846.  
ultracentrifuge experiments with, III, 944.
- Insemination**, artificial, and semen collection in bovines, III, 314.
- Institute of Physiology**, Bueno Aires, publications of, III, 280.
- Instruments**, alloys for, I, 75.  
surgical. See Surgical instruments.
- Insulin**, III, 522.  
action of papain and trypsin on digests of, III, 936.  
allergy to, III, 382.  
assay of, III, 382.  
attenuation of, by adsorption, III, 308.  
cellular response to, of adrenals in pigeons, III, 27.  
cerebral cortex lesions due to, III, 739.  
coma, reflex activity changes in, III, 302.  
therapeutic, maintenance of, III, 586.  
concentration of, in blood of normal and pancreatised dogs, III, 308.  
in pancreatic remnant after partial pan-createctomy, III, 686.  
crystalline, antibodies for, III, 809.  
depot, treatment with, of infantile diabetes, III, 27.  
detection of, in urine, III, 611.  
effect of, in psychotic non-diabetic cases, III, 586.  
on blood-pyruvate, -lactate, and -glucose, III, 293.  
on brain oxidations, III, 122.  
on brain tissue, III, 302.  
on citric fermentation, III, 716.  
on coronary vessels, III, 841.  
on diaphragm metabolism in rats, III, 332.  
on ketone production, III, 45.  
on pyruvic acid formation in depancreatized dogs, III, 686.
- ferrihemochromogen**, III, 685.  
globin, action of, compared with protamine zinc insulin, III, 122.  
glucose appetite of rats treated with, III, 685, 746.  
hypoglycaemia from, III, 294.  
effect of corticosterone and pituitary hormone on, in adrenalectomy, III, 121.  
in epilepsy, III, 110.  
inactivation of, by thiol compounds, III, 710.  
injection of, results of, in five generations of rats, III, 383.
- Langerhans islet** changes after administration of, III, 686.  
mol. wt. of, III, 888.  
native and reduced, diffusion and ultra-centrifuge studies on, in Duponol solution, III, 888.
- pancreas**. See under Pancreas.
- physiological activity of, effect of high-pressure treatment on, III, 230.  
poisoning by. See under Poisoning.
- reaction of, with dilute alkali, lanthionine formation from, III, 308.
- Insulin**, reduced, ultracentrifuge study of, III, 888.  
resistance to, III, 451, 452.  
associated with allergy, III, 452.  
sensitivity to, action of noxious agents on, III, 121.  
shock from, cerebral damage from, III, 884.  
effect of, on bulbocapnine catalepsy, III, 586.  
vitamin-B<sub>1</sub> in, III, 451.  
tolerance test with, on infants, III, 451.  
treatment with, of diabetes, III, 230.  
of pituitary diabetes in cats, III, 598.  
shock, cardiac outline changes in schizoprenics after, III, 439.  
cerebral lesions due to, III, 20.  
death from, III, 217.  
of schizophrenia, insulin tolerance and body-weight changes in, III, 308.
- Insulin-protamine-zinc**, action of mixtures of, with soluble zinc insulin, III, 809.  
duration of different size doses of, III, 451.  
handling of, III, 382.  
sensitivity to, III, 686.  
treatment with, of diabetics, III, 382.
- Insulin-zinc**, soluble, action of mixtures of, with protamine zinc insulin, III, 809.
- Integerrimine**, action of, III, 771.
- Intellect**, physiology of, illustrated by Jacksonian seizures, III, 674.
- Intelligence**, tests of, effect of sodium amytal on, in man, III, 884.  
in children, III, 18.
- Intercepts**, geometric interpretation of method of, I, 205.
- Interfaces**, solid-liquid, immobile layer at, I, 142.
- Interfacial tension**. See Surface tension.
- Interferometers**, Fabry-Perot, parallel arrangement of, I, 157.  
grating, optical properties of, I, 157.
- Interferometry** of light scattering, I, 316.
- Interionic reciprocal action**, theory of, I, 338.
- Intermenstrual crises**, III, 139.
- Interranalin**. See Adrenal cortex extract.
- Intersexuality**, III, 125, 688.  
adrenal cortex hyperplasia and, familial, III, 892.  
due to oestrogen passed from blood of ring-doves to their ovarian eggs, III, 812.  
experimental, III, 812.  
spontaneous, in rats, III, 80.
- Intervertebral disc**, extrusion of, pressure from, neurological syndromes produced by, III, 675.  
lesions of, and radiology, III, 789.
- Intestinal tract**, acetylcholine in, III, 242.  
lymph follicles of, Russell bodies in, in pigs, III, 569.
- Intestines**, absorption from, effect of rate of osmotic work on chloride ion during, III, 143.  
of bromide, chloride, and deuterium oxide, fluid circuit theory applied to, III, 529.  
of chloride, effect of bile salts on, III, 817.  
of water, and its distribution in the organism, III, 692.
- acids in, as pancreatic stimulus, III, 242.  
activity of, effect of liquid and solid meals on, III, 242.  
blood flow in, effect of distension on, III, 98.  
calcium and phosphorus absorption in, III, 143.  
contents of,  $p_H$  of, in relation to calcium and phosphorus utilisation, III, 529.  
contractions of, effect of elevated metabolism on, III, 457.  
disease of, ulcerative, treatment of, with sulphaguanidine, III, 839.
- distended, blood-oxygen utilisation by, III, 754.  
distension of, effect of, III, 692.  
effect on, of carnosine, III, 375.  
of opiates, III, 842.
- fats and paraffins in, emulsification and absorption of, III, 456.  
flatulence in, treatment of, with pitressin, III, 608.

- Intestines**, galacturonic acid absorbed by, III, 393.  
 glucose absorption from, in man, III, 144.  
 infections of, treatment of, with sulphaguanidine, III, 920.  
 with sulphanilylguanidine in children, III, 706.  
 See also Dysentery, Typhoid, etc.  
 inhibitory reflex arc of, localisation of, III, 881.  
 isolated, action on, of barbiturates, III, 925.  
 reaction of, to increased calcium and potassium, III, 143.  
 large, activity of, effect of morphine on, in dogs, III, 144.  
 disease of, III, 895.  
 irritable, and peptic ulcer in army, III, 896.  
 irritation in, III, 243.  
 effect of bran on, III, 243.  
 polyposis of, familial, III, 754.  
 in infants and children, III, 152.  
 position of, III, 817.  
 length of, effect of diet on, in rats, III, 657.  
 lymphatic pathways from, in dogs, III, 789.  
 motility of, action of laxatives on, III, 710.  
 effect of light on, III, 340.  
 effect of vitamin-B on, III, 154.  
 mucosa of, dipeptidases in, III, 342.  
 "fructose" and phosphate in, effect of glucose and phloridzin on, in rats, III, 608.  
 muscle of. See under Muscle.  
 obstruction of, acute, III, 457.  
 use of low intestinal intubation in, III, 393.  
 parasites of. See under Parasites.  
 pathogens from, III, 644.  
 peristalsis of. See Intestines, movements of.  
 phosphate secretion into lumen of, during monosaccharide absorption, III, 895.  
 pressure in, reflex regulation of, III, 754.  
 rentgenology of, in sprue, III, 528.  
 small, distension of, effect of, on bile and urine flow, III, 242.  
 effect of vitamin-B deficiency on, III, 393.  
 gastric inhibition caused by amino-acids in, III, 753.  
 intubation studies of, in man, III, 816.  
 isolated, action of drugs and sugars on, III, 817.  
 chemical excitability of, in rabbits, III, 895.  
 motility of, effect of vitamin-B complex deficiency on, III, 816.  
 X-ray findings of, III, 242.  
 rhythmic contractions of, effect of hyperthyroidism on, III, 457.  
 sugar absorption by, effect of lactoflavin on, III, 608.  
 villi of, movement and secretion of, III, 894.  
 See also Duodenum, Ileum, and Jejunum.
- Intocostrin**, premedication with, in cardiazol convulsions, III, 20.  
 See also Curare.
- Intoxication**. See Poisoning.
- Intramolecular rearrangements**, II, 83.
- Intussusception** in adults, III, 895.
- Inula helenium***, pharmacology of, III, 772.
- Inulin**, clearances of, in newborn infant with extrophy of bladder, III, 460.  
 determination of, in blood and urine, III, 427.  
 with diphenylamine, III, 656.  
 diffusion of, in tissues, III, 575.  
 secretion of, detection of, by kidney tubule, III, 32.
- Invertase**, photo-inactivation of, by coloured ions, III, 641.  
 yeast, reactivation of, effect of proteins on, III, 173.
- Invertebrates**, agglutinin formation absence in, III, 290.
- Iodates**. See under Iodine.
- Iodides**. See under Iodine.
- Iodination**, I, 98; II, 45.
- Iodine**, addition of, to ethylene derivatives, I, 243.  
 adsorption of, from carbon tetrachloride, I, 54.  
 atomic, production of, in reaction of peroxides with iodides, I, 149.  
 blood-. See under Blood.  
 content of, in blood, saliva, and urine in New York City area, III, 322.  
 distribution of, in plasma and thyroid after hypophysectomy, III, 593.  
 fixation of, by thyroids of rats on iodine-deficient diets, III, 450.  
 in blood and urine in diabetes insipidus, III, 687.  
 in thyroid, behaviour of, during scurvy, III, 744.  
 ingestion of, thyroid activity after, III, 520.  
 isotopes of, from uranium fission, I, 34.  
 radioactive, half-life of, I, 35.  
 metabolism of. See under Metabolism.  
 plasma-protein-bound, in thyroid disorders, III, 117.  
 reaction of, with glucose in alkaline medium, I, 207.  
 tolerance to, III, 476.
- Hydriodic acid**, adsorption of, by silica gel, I, 171.  
 breakdown potentials in, I, 8.  
 gaseous, equilibrium of formation of, I, 328.  
 reaction of, with dichromates, catalysed by oxalates, I, 402.
- Iodides**, determination of, I, 377.  
 by oxidation with ozone, I, 374.  
 microchemically, I, 374.  
 volumetrically, with mercuric nitrate and diphenylcarbazine, I, 181.  
 exchange reaction of, with alkyl iodides, I, 301.  
 expectorant action of, III, 711.  
 photo-oxidation of, sensitised by cosin, I, 208.  
 reaction of, with persulphates, I, 103, 106.  
 tolerance to, influence of thyroid on, in rabbits, III, 381.
- Iodic acid**, spectrum of, Raman, I, 387.
- Iodates**, determination of, in presence of cupric salts, I, 339.  
 photo-electrically, III, 428.  
 reduction of, at dropping mercury cathode, I, 303, 399.
- Periodates**, colour stability of permanganates and, I, 119.  
 determination in, of iodine, I, 248.  
 of quadrivalent metals, I, 70.
- Iodine organic compounds**, use of, in radio-graphy, II, 311.
- Iodine detection and determination**:-  
 detection of, reagent for, I, 333.  
 determination of, I, 407.  
 in blood and urine, III, 428.  
 in periodates, I, 248.  
 in sea water, I, 338.  
 microchemically, I, 276.  
 photo-electrically, III, 428.
- Iodophthalein**, treatment with, of paratyphoid carriers, III, 706.
- Ions**, accelerating tubes for, I, 158.  
 activation energy of substitution of, I, 148.  
 monatomic, heats of solution of, in methyl alcohol, I, 64.  
 coloured, adsorption of, demonstration of, I, 282.  
 complex, I, 62, 398.  
 concentration determination of, temperature correction in, I, 269.  
 concentration gradients of, in relation to biochemistry, I, 366.  
 diamagnetism of, I, 261.  
 dipolar, anomalous dispersion of, I, 133.  
 elkonite in cyclotrons for, I, 308.  
 exchange of, between solids and solutions, I, 110.  
 focussing beams of, I, 158.  
 heavy, momentum loss of, I, 79.  
 interaction of, and dipolar ions, I, 141.  
 large currents for production of, I, 3.  
 metal, spectra of, K-absorption, I, 285.  
 mol. vol. of, in aqueous solutions, I, 234.  
 positive, canal ray sources of, I, 280.  
 reaction of, with dipolar molecules, I, 400.  
 source of, with mass chromator, I, 342.
- Ionisation**, amplifier for, I, 280.  
 gauges for, I, 281.  
 in non-aqueous solvents, I, 367.
- Ionisation chambers**, electrometer for voltage measurements on, I, 342.  
 plastic, I, 342.  
 X-ray, I, 117.
- Ionisation potential**. See under Potential.
- $\beta$ -Ionone**, behaviour of, in animal body, III, 258.
- Ionosphere**, temperature of, I, 3.
- Iridium halides**, carbonyls of, I, 306.
- Iridium organic compounds**:-  
 Iridium tricarbonyl, and its bromide, I, 247.  
 tetracarbonyl, I, 247.
- Iridium determination**:-  
 determination of, spectrophotometrically, I, 377.
- Iron**, co-precipitation of, with barium sulphate, I, 154.  
 crystals, magnetisation of, I, 87.  
 diffusion of elements in, I, 359.  
 $\Delta E$  effect of, I, 88.  
 equilibrium of, with the sulphide and silicide, I, 145.  
 growing oxide layers on, I, 136.  
 in sun, I, 309.  
 isotopes of, I, 161, 255.  
 radioactive, disintegration of, I, 383.  
 for study of red blood cells, III, 730.  
 from haemoglobin, neutralisation of, to form new haemoglobin, III, 729.  
 separation of, from blood, electrolytically, III, 504.  
 magnetism of, increase of, by electric currents, I, 137.  
 meteoritic, section planes of, I, 283.  
 passivity of, in alkaline solutions, I, 141.  
 permeability of, I, 311.  
 potential of, temperature coefficient of, I, 399.  
 spectrum of, I, 126, 309.  
 structure and properties of, and its alloys, I, 390.  
 thermal expansion of, I, 50.
- Iron alloys**, irreversible transformations of, I, 358.  
 with aluminium and cobalt, I, 18.  
 with aluminium and magnesium, I, 18.  
 with aluminium and nickel, I, 169, 323.  
 with carbon and titanium, I, 359.  
 with chromium and nickel, phases of, I, 93.  
 with cobalt, I, 169.  
 with copper and nickel, constitution of, I, 18.  
 with gold, ferromagnetic, I, 323.  
 with nickel, magnetisation of single crystals of, I, 87.  
 A3 transformation of, I, 93.  
 with nickel and titanium, precipitation of, from solid solution, I, 395.  
 with niobium, tantalum, titanium, and zirconium, structure of, X-ray, I, 354.  
 with platinum, coercivity and structure of, I, 323.  
 with zinc, I, 394.  
 diffusion formation of, I, 358.
- Iron compounds**, absorption of, in absence of bile, III, 608.  
 assimilation of, effect of sex on, in rats, III, 827.  
 elimination of, through kidney and salivary glands of guinea-pigs, III, 836.  
 exchange in, on brown and white bread diet, III, 906.  
 haemoglobin in, absorption of, III, 661.  
 in beef, effect of heat on availability of, III, 760.  
 in bull spermatozoa, III, 752.  
 in fish, III, 901.  
 in plants, III, 359.  
 ionised, origin of, after action of acids on blood, and influence of carbon monoxide, III, 796.  
 non-haemin, in fish, nature of, III, 901.  
 of adrenals in guinea-pig and rat, III, 887.  
 pharmacology of, in parenteral treatment, III, 796.  
 value of, in iron-copper-nucleoprotein complex from fish muscle, in anaemia, III, 871.

- Iron dihydrogen periodate**, I, 246.
- Ferric ions**, association of, with bromide, chloride, and hydroxyl ions, I, 239.  
complex, with thiocyanate, I, 398.
- Ferric salts**, reaction of, with orthophosphates, I, 249.
- Ferric chloride**, complex formation and distribution of, with water and ether, I, 202.  
equilibrium of, with sodium chloride, I, 240.  
reduction of, by stannous chloride, I, 282.  
hydroxide, action of chlorine on, in presence of iodine, I, 181.  
 $\gamma$ -form, thermal reaction of, with  $\beta$ -zinc hydroxide, I, 404.  
sols, I, 237.  
oxide, reaction of, with metallic oxides, I, 336.  
sols, depolarisation of Tyndall-scattered light of, I, 172.  
effect on, of hexametaphosphates, I, 325.  
thixotropic, absorption in, I, 365.  
centrifuging of, I, 57.  
viscosity of, I, 265.  
spectrum of, *K* absorption, I, 224.  
suspensions, thixotropic transformation of, I, 57.  
phosphate, gels, setting of, I, 238.
- Ferrous ions**, complex, vibrational structure of, I, 225.  
with *o*-phenanthroline, I, 398.
- Ferrous oxide**, equilibrium of, with alumina and silica, I, 329.  
with aluminium, calcium, and silicon oxides, I, 330.  
silicate, specific heat of, at low temperatures, I, 50.  
sulphate, calorimetry of aqueous solutions of, I, 175.  
equilibrium of, with sulphuric acid and water, I, 329.  
sulphates, I, 328.  
sulphide, mixed crystals of, I, 294, 298.
- Iron organic compounds** :—
- Iron carbonyl**, and its hydride, I, 337.  
*pentacarbonyl*, reaction of, with organo-metallic compounds, I, 336.  
carbonyl halides, I, 210.  
carbonyl hydride, reaction of, with organo-metallic compounds, I, 336.  
carbonyl iodide, I, 247.
- Iron detection and determination** :—  
detection of, with luminol, I, 153.  
determination in, of tellurium, I, 153.  
determination of, by silver reductor method, I, 115.  
colorimetrically, with kojic acid, I, 26.  
electrolytically, I, 278.  
in serum, III, 875.  
in silicates, I, 72.  
in zinc, I, 154.  
spectrophotometrically, III, 428, 564.  
volumetrically, with potassium dichromate, I, 410.  
with ceric sulphate, I, 249.  
ferrous, determination of, colorimetrically, I, 340.  
in silicates, I, 115.  
ferrous and ferric, determination of, micro-chemically, in minerals, I, 184.
- Iron boulder**, Nordenskiöld, Ovisfak, Greenland, metallurgy of, I, 346.
- Iron electrodes**. See under *Electrodes*.
- Iron ores**, banded deposits of, I, 346.  
magnetic, origin of, in Lyon Mountain region, I, 219.  
S.W. Missouri, mineralisation in, I, 346.
- Iron**, degradation of, with chromic acid and ozone, II, 233.  
physical properties of, and its derivatives, II, 99.  
spectrum of, absorption, I, 164.  
synthesis of, II, 200.  
thiosemicarbazone, II, 415.
- Ironstone**, clay, deposits of, in Lichtenstein Mountain, I, 124.
- Isatidine**, action of, III, 772.
- Isatin**,  $\alpha$ -chlorides, halogenation of, II, 203.
- Isatoic anhydride**, elimination of, III, 476.
- Ischaemia**, cerebral, focal, vasospasm and, III, 674.  
myocardial, effect of, on coronary blood flow, III, 577.
- Isia isabella**, lateral ocelli of, III, 885.
- Isoelectric point**, theory of, I, 267, 328, 367.
- Isomerisation**, *cis-trans*, I, 149.
- Isomerism**, *cis-trans*, demonstration of, I, 251.  
optical, mechanism and kinetics of change of, I, 148.  
rotational, molecular configurations in, I, 80.  
Raman effect and, I, 83.
- Isomorphous substances**, indexing powder diffraction patterns of, I, 259.
- Isopods**. See *Ligia baidiniana*.
- Isoprene**, formation of, from acetone, II, 70.  
hydrobromide, reaction of, with magnesium cyclohexyl chloride, II, 185.
- $\beta$ -Isoprenesulphone**, crystal structure of, I, 291.
- Isorotation**, Hudson's rule of, I, 388.
- Isosteric compounds**, II, 274, 290, 373 ; III, 647.
- Isotopes**, I, 223.  
analysis of, mass spectrometers for, I, 117.  
gaseous, separation of, by mathematical method, I, 337.  
Clusius tube for, energy consumption in, I, 379.  
of elements from hydrogen to vanadium, I, 161.  
radioactive, artificial, detection of, I, 79.  
dosage with, III, 932.  
separation of, I, 282.  
by fractional crystallisation, I, 118.  
by thermal diffusion, I, 350.  
tubes for, I, 152.  
stable, international table of, I, 381.  
separation and use of, I, 191.
- Ivy**, poison, dermatitis due to. See under *Dermatitis*.  
hyposensitisation to, III, 356.  
oleoresin of, III, 357.
- Ixone**, II, 321.
- J.**
- Jacobine**, action of, III, 771.
- Jamaica ginger palsy**. See under *Palsy*.
- Jamesonite**, crystal structure and composition of, I, 380.
- Jarosite**, formation of, on pyrite ornaments, I, 220.
- Jasmone**, synthesis of, II, 363.
- Jaundice**, acholuric, familial, associated with bone changes, III, 661.  
blood-non-protein-nitrogen in, III, 370.  
electrocardiogram changes in, in man, III, 578.  
galactose clearance test for, III, 458.  
gonorrhoeal, bilirubin in serum in, III, 198.  
hepato-cellular, van den Bergh reaction in relation to, III, 530.  
in children, III, 319.  
induction of, in treatment of atrophic arthritis, III, 458.  
intrahepatic and extrahepatic, differentiation of, III, 31.  
leptospiiral, epidemiology of, in Baltimore, III, 558.  
nonhaemolytic, familial, III, 458.  
obstructive, blood-phospholipins and plasma-phosphatase in, III, 848.  
diagnosis of, by blood picture, III, 144.  
plasma-lipins in, III, 530.  
treatment of, with vitamin-K, III, 9.  
van den Bergh reaction in relation to, III, 530.  
of adult brain, III, 378.  
surgical, differentiation of, from severe liver damage, III, 458.  
T.N.T., III, 415.  
urobilinogen tests in, III, 319.
- Jaws**, lower. See *Mandibles*.
- Jejunum**, diverticulitis in, III, 143.  
loops, sodium oleate absorption from, effect of bile on, in dogs, III, 754.  
secretions of, acid-base balance and carbon dioxide tension of, in man, III, 607.
- Jelly-fish**, water percentage in, III, 901.
- Jervine**, and its derivatives, III, 723.  
dehydrogenation of, II, 40.
- Johne's disease**, diagnosis of, by johnin test, III, 557.  
in cattle, III, 647.
- Joints**, changes in, X-ray evidence of, in compressed-air workers, III, 879.  
eudiarthrodial, in fish, III, 865.  
knee. See *Knee-joints*.  
subtalar and transverse tarsal, movements of, III, 1.
- Joule's law**, I, 353.
- K.**
- Kaempferol 3:7:4'-triacetate**, II, 149.
- Kaersutite** in lavas of Puy chain, I, 252.
- Kalanchoe blossfeldiana**, blossoming of, III, 860.
- Kalsilite**, Uganda, I, 380.
- Kaolin**, deposit of, at Cauces near Carballo, Coruña, I, 284.  
origin of, I, 284.  
roasted, reaction of, with lime in aqueous solutions, I, 245.
- Kaposi's disease**, III, 466, 904.
- Karanjin**, action of aluminium chloride on, II, 420.
- Kartagener's triad**, III, 281.
- Karyoclasia**, produced by colchicine, in amphibians, III, 287.
- Kaseni**. See *Scirpus grossus*.
- Kayser-Fleischer ring**, with hepato-lenticular degeneration, III, 113.
- Keratin**, stability of, effect of alkalis on, III, 822.  
structure of, I, 231.  
wool, structure of, I, 354.
- Keratitis**, non-vascular, treatment of, with riboflavin, III, 22.  
syphilitic, treatment of, with sulphonamides, III, 706.
- Keratoconus**, treatment of, with adrenalin, III, 678.
- Keratoses**, respiration of, in man, III, 904.
- Keten**, acetals, II, 216, 227, 296.  
diisomyl acetal, II, 296.  
diisobutyl acetal, II, 296.  
diethyl acetal, reaction of, with halogen compounds and acids, II, 216.  
with  $\alpha\beta$ -unsaturated carbonyl compounds, II, 227.  
dipropyl acetal, II, 296.  
Friedel-Crafts reaction with, II, 16.  
photolysis of, I, 179.  
reaction of, with 5:5-dibromo-4-hydroxyhydro-uracil, II, 272.
- Ketens**, addition of chloroamines to, II, 349.
- 1-Keto-2-acetonyl-1:2:3:4-tetrahydrophenanthrene**, II, 318.
- 3-Keto-12(a)-acetoxycholanolic acid**, methyl ester, II, 412.
- 3-Keto-12( $\beta$ )-acetoxy- $\Delta^4$ -cholenic acid**, methyl ester, II, 413.
- $\beta$ -Keto- $\alpha$ -acetyladipeic acid**, methyl ethyl ester, and its salts, II, 426.
- $\gamma$ -Keto- $\beta$ -p-acetylbenzeneazo-*n*-butyric acid**, ethyl ester, and its 2:4-dinitrophenylhydrazones, II, 378.
- 2-Keto-3-acetyl-4-methyl-1:2-dihydroquinoline**, 6-nitro-, II, 16.
- $\alpha$ - and  $\beta$ -9-Keto-12-acetyltetradecahydrophenanthrenes**, and their derivatives, II, 285.
- $\alpha$ -Keto-acids**, condensation of, with benzyl carbamate, II, 76.  
semicarbazones and thiosemicarbazones of, II, 427.
- $\beta$ -Ketoadipic acid**, ethyl ester, reactions of, II, 425.  
methyl ethyl ester, and its derivatives, II, 426.
- 11-Ketoethallocholanolic acid**, 3(a):17( $\beta$ )-dihydroxy-, methyl ester, 3-acetate, II, 414.
- Keto-alcohols**, II, 18.
- $\alpha$ -Keto-alcohols**, cyclic, oxidation of, by lead tetra-acetate, II, 324.  
isomeric transformations of, II, 57.
- $\beta$ -Keto-amines**, preparation of, II, 236.
- $\gamma$ -Keto- $\gamma$ -*o*-aminophenylbutyric acid**, *l*- $\alpha$ -amino-, II, 362.

- 3-Ketoandrostan-17-acetic acid, methyl ester, II, 367.
- 2-Keto-1-*p*-anisylidenebenzofuran, reactions of, II, 179.
- $\alpha$ -Keto-bases, syntheses of, and their reactions with secondary nitrogen, II, 269.
- 3:6-*endo*-Keto-4-benzoyl-1:2-diphenyl-3:6-dimethyl- $\Delta^1$ -cyclohexene, II, 319.
- 2-Keto-1-( $\beta$ -benzoyl- $\beta$ -phenyl- $\alpha$ -*p*-amylethyl)-benzofuran, II, 179.
- 1-Keto-2-benzylaminomethyl-1:2:3:4-tetrahydronaphthalene hydrochloride, II, 270.
- 2-Keto-3-benzyldecahydroquinazoline, II, 270.
- 2-Keto-3-benzylhexahydroquinazoline, and its hydrochloride, II, 270.
- 2-Keto-1-benzylidenebenzofurans, reactions of, II, 179.
- 2-Keto-3-benzylotahydroquinazoline, II, 270.
- 5-Keto-3-benzylthiol-6-*p*-methoxybenzyl-1:2:5:6-tetrahydro-1:2:4-triazine, II, 428.
- 2-Keto-1-( $\omega$ -bromo-*p*-methoxybenzyl)benzofuran, 1-bromo-, II, 179.
- $\beta$ -Keto- $\beta$ -*p*-bromophenylpropionic acid, and its methyl ester, II, 14.
- 9'-Keto-3'- (or 4')-*tert*.-butyl-8'-azaphenalino-(7':8':2:3)- $\psi$ -indole, II, 429.
- $\gamma$ -Keto- $\gamma$ -6-*sec*.-butyl-naphthylbutyric acid, and its methyl ester, II, 305.
- $\gamma$ -Keto- $\gamma$ -6-*sec*.-butyl-1:2:3:4-tetrahydrophenanthrene, II, 305.
- 1-Keto-2'-(carbamylcyanomethylene)-1:2':3':4':5':6'-hexahydrocoumarinopyrido-3':4':3:4-coumarin, 5'-cyano-, II, 420.
- 6-Keto-1-carbamyltetrahydropyridazine-3-acetic acid, ethyl ester, II, 426.
- Keto-carbinylamines, II, 98.
- 3'-Keto-4'-carbomethoxy-6-methoxy-2-methyl-1:2':3':4'-tetrahydrocyclopentano-1':2':1:2-naphthalene, II, 176.
- 1-Keto-2-carbomethoxy-2:4:6:7-tetramethyl-1:2:3:4-tetrahydronaphthalene, II, 233.
- 3-Keto- $\Delta^{11}$ -choladienoic acid, and its methyl ester, II, 412.
- 3-Ketocholanic acid, 12( $\beta$ )-hydroxy-, lactone, II, 413.
- 7-Ketocholanic acid, 6-hydroxy-, II, 103.
- 3-Keto- $\Delta^4$ -cholonic acid, 12( $\beta$ )-hydroxy-, methyl ester, II, 413.
- 3-Keto- $\Delta^{11}$ -cholonic acid, and its derivatives, II, 412.
- 7-Keto- $\Delta^5$ -cholonic acid, and its methyl ester, II, 103.
- Ketocholic acid, determination of, in bile, III, 459.
- 22-Ketodehydronorcholene, and its oxime, II, 364.
- Ketodeoxycholic acid, determination of, in bile, III, 459.
- $\Delta^5$ -24-Keto-3( $\beta$ ):25-diacetoxy-25-homocholene, II, 265.
- 9'-Keto-3':4'-*di**tert*.-butyl-8'-azaphenalino-(7':8':2:3)- $\psi$ -indole, II, 429.
- 1-Keto-2:4-di-*p*-dimethylaminoanilo-1:2:3:4-tetrahydronaphthalene, II, 364.
- $\gamma$ -Keto- $\delta\delta$ -diethyl-*n*-hexanol, II, 394.
- $\beta$ -Keto- $\gamma\gamma$ -diethyl-*n*-hexoic acid, II, 394.
- 3-Keto-4:5-dihydrodi(1:2)pyrrole, derivatives of, II, 287.
- 21-Ketodihydro-oleanic acid, methyl ester, II, 418.
- 2'-Ketodihydro-1:2-cyclopentenophenanthrene, synthesis of, II, 318.
- 2-Keto-1-( $\omega$ -*p*-dimethoxybenzyl)benzofuran, 1-bromo-, II, 179.
- 4-Keto-6:7-dimethoxy-1:3':4'-dimethoxyphenyl-2:3-dimethyl-1:2:3:4-tetrahydronaphthalene, 1 (or 2)-hydroxy-, and its semicarbazone, II, 402.
- $\gamma$ -Keto- $\delta\delta$ -dimethyl- $\alpha$ -allylpentane- $\alpha\alpha$ -dicarboxylic acid, diethyl ester, II, 32.
- $\alpha$ - and  $\beta$ -3-Keto-2- and 4-dimethylaminomethylcyclohexyl acetate hydrochlorides, II, 317.
- 1-Keto-2-*p*-dimethylaminophenyl-3-*p*-tolyl-1:3-dihydroisoindole, II, 329.
- $\gamma$ -Keto- $\delta\delta$ -dimethyl- $\alpha$ -isooamylpentane- $\alpha\alpha$ -dicarboxylic acid, diethyl ester, II, 32.
- $\alpha$ -Keto- $\beta\beta$ -dimethyl- $\gamma$ -butyrolactone, II, 250.
- $\beta$ -Keto- $\epsilon\epsilon$ -dimethyl- $\gamma$ - $\beta'$ - $\beta'$ -dimethyl-*n*-propyl-*n*-heptoic acid, II, 349.
- 6'-Keto-5:4'-dimethylene-1':2':3':4'-tetrahydro-3:4-benzopyrene, II, 86.
- $\beta$ -Keto- $\alpha\delta$ -dimethyl- $\alpha$ -ethyl-*n*-hexoic acid, ethyl ester, II, 130.
- $\gamma$ -Keto- $\delta\delta$ -dimethyl- $\alpha$ -ethylpentane- $\alpha\alpha$ -dicarboxylic acid, diethyl ester, II, 32.
- $\delta$ -Keto- $\epsilon\epsilon$ -dimethyl-*n*-hexoic acid, ethyl ester, II, 32.
- $\delta$ -Keto- $\beta\beta$ -dimethyl-lauric acid, and its derivatives, II, 345.
- $\gamma$ -Keto- $\delta\delta$ -dimethylpentane- $\alpha\alpha$ -dicarboxylic acid, and  $\alpha$ -hydroxy-, diethyl esters, II, 32.
- $\gamma$ -Keto- $\delta\delta$ -dimethyl- $\Delta^4$ -pentene- $\alpha\alpha$ -dicarboxylic acid, diethyl ester, II, 32.
- 1-Keto-2:5-dimethyl-7-isopropyl-1:2:3:4-tetrahydronaphthalene, II, 356.
- $\beta$ -Keto- $\alpha\gamma$ -di-(1-methyl-2-pyrrolidyl)butyric acid, ethyl ester, dipicrate, II, 287.
- 4-Keto-2:2-dimethyl-1:2:3:4-tetrahydroacridine, and its derivatives, II, 331.
- 1-Keto-4:7-dimethyl-1:2:3:4-tetrahydronaphthalene, and its semicarbazone, II, 27.
- $\delta$ -Keto- $\beta\beta$ -dimethylundecic acid, and its 2:4-dinitrophenylhydrazones, II, 345.
- $\gamma$ -Keto- $\alpha\gamma$ -diphenyl-*n*-butyric acid, ethyl ester, II, 253.
- $\gamma$ -Keto- $\alpha\gamma$ -diphenyl- $\beta$ -butyrolactones, II, 94.
- 2:5-*endo*-Keto-3:4-diphenyl-2:5-dimethyl-6-ethyl- $\Delta^3$ -tetrahydrobenzoic acid, II, 319.
- 2:5-*endo*-Keto-3:4-diphenyl-2:5-dimethyl- $\Delta^3$ -tetrahydrobenzoic acid, methyl ester, II, 319.
- 3:6-*endo*-Keto-4:5-diphenyl-3:6-dimethyl- $\Delta^4$ -tetrahydrophthalic acids, dimethyl esters, II, 319.
- 3:6-*endo*-Keto-4:5-diphenyl-3:6-dimethyl- $\Delta^4$ -tetrahydrophthalic anhydride, II, 319.
- $\gamma$ -Keto- $\beta\beta$ -diphenyl- $\Delta^4$ -heptenoic acid,  $\gamma$ -bromo-, ethyl ester, and its dibromide, II, 227.
- 5-Keto-1:3-diphenyl-2-methylpyrazole-4-aldehyde, derivatives of, II, 380.
- i*-Ketodocosanoic acid, II, 163.
- $\beta$ -Keto-esters,  $\alpha\alpha$ -disubstituted, syntheses of, II, 130.
- Keto-ethers, II, 300.
- 3-Keto-5-ethoxy-2-carbethoxy- $\Delta^4$ -tetrahydrobenzoic acid, II, 227.
- 3-Keto-1-ethoxy-1-phenyl-2:2-dimethylhydri-ndene, II, 146.
- 3-Keto-5-ethoxy- $\Delta^4$ -tetrahydrobenzoic acid, II, 227.
- 3-Keto-5-ethoxy- $\Delta^4$ -tetrahydrophthalic acid, II, 227.
- $\delta$ -Keto- $\gamma$ -ethyl- $\Delta^4$ -butene- $\alpha\delta$ -dicarboxylic acid, and its esters, II, 29.
- 1-Keto-6-ethyl-4:5-methylene-1:2:3:4-tetrahydronaphthalene, II, 86.
- $\gamma$ -Keto- $\gamma$ -6-ethyl-2-naphthylbutyric acid, and its methyl ester, II, 305.
- $\beta$ -Keto- $\alpha$ -ethyl-*n*-nonoic acid, *n*-propyl ester, II, 247.
- $\alpha$ -Ketoglutaric acid, metabolism of. See under Metabolism.
- 4-Ketohexahydrobenzaldehyde, II, 262.
- 2-Keto-1:2:8:9:10:10 $\alpha$ -hexahydro-3:4-benzopyrene, II, 8.
- 1-Keto-3- $\Delta^1$ -cyclohexenyl- $\Delta^2$ -octahydronaphthalene, and its derivatives, II, 285.
- 3-Ketocyclohexyl acetate and benzoate, II, 317.
- 4-Ketocyclohexyl benzoate, and its 2:4-dinitrophenylhydrazones, II, 310.
- $\beta$ -Keto- $\beta$ -cyclohexyl- $\alpha$ -*p*-anisylethyl alcohol, II, 362.
- 2-Ketocyclohexylmethylcyclohexylidene-ethylidimethylammonium bromide, II, 353.
- 2-Ketocyclohexylmethylmalonic acid, diethyl ester, semicarbazone, II, 409.
- 2-Ketocyclohexylmethyl-3:4-methylenedioxybenzylamine, and its hydrobromide, II, 270.
- $\beta$ -2-Ketocyclohexylpropionic acid, and its derivatives, II, 409.
- $\beta$ -4-Ketocyclohexylpropionic acid, semicarbazone, II, 144.
- $\kappa$ -2-Ketocyclohexylundecic acid, II, 283.
- $\alpha$ -Keto- $\beta$ -hydroxybutyric acid, and its derivatives, II, 46.
- Ketohydroxycassanic acid, derivatives of, II, 210.
- 2-Keto-4:5-dihydroxy-3:4-diphenyltetrahydroglyoxaline, II, 379.
- $\lambda$ -Keto- $\mu$ -hydroxy- $\Delta^{\beta\beta}$ -docosadi-imine, II, 393.
- 1- $\alpha$ -Keto- $\beta$ -hydroxyethyldecahydronaphthalene, II, 97.
- $\epsilon$ -Keto- $\omega$ -hydroxyhexadecic acid, and its semicarbazone, II, 392.
- 3'-Keto-6-hydroxy-2-methyl-1:2:3:4-tetrahydrocyclopentano-1':2':1:2-naphthalene, II, 176.
- 2-Keto-4:5-dihydroxy-4-phenyltetrahydroglyoxaline, II, 379.
- 4-Keto-2-imino-5-benzylthiazolidine, II, 426.
- $\gamma$ -Keto- $\gamma$ -*p*-iodophenyl-*n*-butyric acid, and its esters, II, 311.
- $\epsilon$ -Keto- $\epsilon$ -*p*-iodophenyl-*n*-hexoic acid, and its ethyl ester, II, 311.
- 2-Keto-1-( $\omega$ -(2'-keto-1'-cyclohexyl)-*p*-methoxybenzyl)benzofuran, II, 179.
- Ketols, II, 188.
- $\alpha$ -Ketols, steroid, II, 103, 104, 413.
- 5-Keto-3-*p*-methoxybenzyl-4:5-dihydro-1:2:4-triazole, II, 428.
- 1-Keto-7-methoxy-2-*n*-butyl-1:2:3:4-tetrahydrophenanthrene-2-carboxylic acid, methyl ester, II, 105.
- $\gamma$ -Keto- $\beta$ -methoxy- $\alpha\gamma$ -diphenyl-*n*-butyric acids, II, 95.
- 2-Keto-1-(*p*-methoxy- $\omega$ -ethoxybenzyl)benzofuran, 1-bromo-, II, 179.
- 1-Keto-7-methoxy-5-methyl-8-*tert*.-butyl-1:2:3:4-tetrahydronaphthalene, and its derivatives, II, 409.
- 1-Keto-7-methoxy-2-methylhexahydrophenanthrene-2-carboxylic acid, methyl ester, II, 263.
- 1-Keto-9-methoxy-2-methyl-*s*-octahydrophenanthrene-2-carboxylic acid, methyl ester, II, 230.
- 1-Keto-6-methoxy-2-methyl-1:2:3:4-tetrahydro-2-naphthoic acid, methyl ester, II, 176.
- 3'-Keto-6-methoxy-2-methyl-1:2:3:4-tetrahydrocyclopentano-1':2':1:2-naphthalene, II, 176.
- 1-Keto-9-methoxy-*s*-octahydrophenanthrene, II, 230.
- 1-Keto-9-methoxy-*s*-octahydrophenanthrene-2-glyoxylic acid, methyl ester, II, 230.
- 2-Keto-5- $\beta$ -*p*-methoxyphenylethyltetrahydrofuran, II, 148.
- 2-Keto-5-*p*-methoxystyryl-2:3-dihydrofuran, dibenzoyl derivative, II, 148.
- 1-Keto-6-methoxy-1:2:3:4-tetrahydro-2-naphthoic acid, methyl ester, II, 176.
- $\gamma$ -Keto- $\gamma$ -4-methoxy-5:6:7:8-tetrahydro-1-naphthyl-*n*-butyric acid, II, 230.
- 3-Keto-17-methylstiocholanic acid, and its methyl ester, II, 231.
- $\delta$ -Keto- $\gamma$ -methyl- $\Delta^4$ -butene- $\alpha\delta$ -dicarboxylic acid, and its esters, II, 28, 29.
- 1-Keto-5-methyl-8-*tert*.-butyl-1:2:3:4-tetrahydronaphthalene, and its derivatives, II, 409.
- 2-Keto-8-methyldecahydronaphthalene, and its semicarbazone, II, 27.
- cis*-1-Keto-9-methyldecahydronaphthalene, derivatives of, II, 21.
- optical isomerides of, II, 20.
- 2-Keto-8-methyldecahydronaphthalenecarboxylic acid, ethyl ester, II, 27.
- 2-Keto-6-methyl-1:2-dihydrocinchoninic acid, II, 423.
- 1'-Keto-5-methyl-6:7-dimethylene-7:8:9:10-tetrahydrochrysene, II, 87.
- 1-Keto-2-3'-4'-methylenedioxybenzylamino-methyl-1:2:3:4-tetrahydronaphthalene, hydrochloride, II, 270.
- 2-Keto-3-3'-4'-methylenedioxybenzylhexahydronaphthapyrimidine, II, 270.
- 2-Keto-3-3'-4'-methylenedioxybenzylloctahydroquinazoline, and its *N*-benzoyl derivative, II, 270.
- 4-Keto-1-methyl-7-ethyl-1:2:3:4-tetrahydrophenanthrene, II, 305.
- $\delta$ -Keto- $\beta$ -methyl- $\beta$ -*n*-hexylnonoic acid, methyl ester, II, 345.
- $\beta$ -Keto- $\beta$ -2-methyl-1-naphthylisobutyric acid, II, 94.
- $\beta$ -Keto- $\beta$ -2-methyl-1-naphthylpropionic acid, II, 94.
- 3-Keto-1-methyl-4:4'- $\Delta^1$ -*dim*itrodibenzo- $\Delta^{1:4:5}$ -cycloheptatriene, and its 2:4-dinitrophenylhydrazones, II, 16.
- $\epsilon$ -Keto- $\rho$ -methyl-*n*-octadecic acid, and its ethyl ester and semicarbazone, II, 298.



- 1-Keto-9-methyloctahydronaphthalenes, and their derivatives, II, 21.
- 2-Keto-10-methyl- $\Delta^{1,9}$ -octahydronaphthalene, and its semicarbazone, II, 318.
- $\gamma$ -Keto- $\zeta$ -methyl- $n$ -octoic acid, and its methyl ester, and their semicarbazones, II, 297.
- $\delta$ -Keto- $\beta$ -methyl- $\beta$ - $n$ -octylundecic acid, II, 345.
- 4'-Keto-1-1 and -2'-methyl-1':2':3':4'-tetrahydro-3:4-benzpyrenes, II, 50.
- 5-Keto-3-methylthiol-6-benzyl-1:2:4-triazine, II, 190.
- 2-Keto-3-methylthiol-1:2-dihydrocinchoninic acid, II, 423.
- 2-Keto-3-methylthiol-1:6-dimethyl-1:2-dihydrocinchoninic acid, II, 424.
- 2-Keto-3-methylthiolmethyl-1:2-dihydrocinchoninic acids, II, 423.
- Ketonaemia, seasonal, in dairy herd, III, 293.
- Ketones, aromatic, unsaturated, condensation of, with dienes, II, 261.
- condensation of, with alcohols in presence of mixed catalysts, II, 299.
- cyclic, determination of, colorimetrically, II, 276.
- photochemical decomposition of, I, 151.
- formation of, effect of insulin on, III, 45.
- isomerisation of aldehydes to, in presence of Japanese acid earths, II, 55.
- oxidation by, of alcohols, II, 16.
- parachors of series of, I, 290.
- photochemical reactions of, with alcohols, II, 363.
- semicarbazones, II, 169.
- spectra of, Raman, and their mixtures with aldehydes, I, 315.
- synthesis of, by Friedel-Crafts reaction, metallic chloride catalysts for, II, 143, 227.
- from  $\alpha$ -disubstituted  $\beta$ -keto-esters, II, 131.
- unsaturated, II, 188.
- polymerised, intramolecular aldol condensations in, I, 147.
- $\alpha\beta$ -unsaturated, constitution and absorption spectra of, II, 164.
- identification of, by hydrazones and pyrazolines, II, 356.
- preparation of, and their reaction with phenylhydrazine, II, 18.
- spectra of, absorption, I, 81.
- Ketonic compounds, origin of, from fats, III, 542.
- $\beta$ -Keto- $\alpha$ - $p$ -nitrobenzoyloxy- $\alpha$ -phenylbutane, II, 57.
- $\alpha$ -Keto- $\gamma$ - $o$ -nitrophenylbutyric acid,  $\alpha$ -amino-, hydrochloride, II, 362.
- 1- $\beta$ -Ketononylcyclohexane-1-acetic acid, II, 346.
- 3-Keto-11:12-oxido- $\Delta^1$ -cholenic acid, methyl ester, II, 413.
- 4:7-endoKeto-1:3:5:6:9-pentaphenyl-2:4:7:8-tetramethyl-4:7:8:9-tetrahydroinden-1-ol, II, 319.
- $\beta$ -Keto- $\beta$ -cyclopentyl- $\alpha$ - $p$ -anisylethyl alcohol, II, 362.
- 1-Keto-3-phenyl-2- $p$ -dimethylaminophenyl-6-methyl-1:3-dihydroisindole, II, 329.
- 3-Keto-1-phenyl-2:2-dimethylhydrindene, 1-hydroxy-, II, 146.
- 5-Keto-1-phenyl-2:3-dimethylpyrazole-4-aldehyde, derivatives of, stereoisomeric, II, 379, 380.
- 5-Keto-3- $\beta$ -phenylethyl-4:5-dihydro-1:2:4-triazole, II, 428.
- 2-Keto-5- $\beta$ -phenylethyltetrahydrofuran, II, 748.
- 5-Keto-1-phenyl-3-methyl-4- $p$ -phenetyliminomethylpyrazole-4-aldehyde 2-methiodide, II, 380.
- 4-Keto-2-phenyl-1:2:3:4-tetrahydroacridine, II, 331.
- 1-Keto-2-phenyl-1:2:3:4-tetrahydronaphthalene, preparation of, II, 20.
- 1-Keto-2-phenyl-3- $p$ -tolyl-1:3-dihydroisindole, II, 329.
- 2-Ketopiperazino(6':4':1:9)carbazole, II, 425.
- $\beta$ -Keto- $\beta$ - $n$ -propionyl- $n$ -valeric acid, ethyl ester, II, 130.
- $\gamma$ -Keto- $\gamma$ -3-pyrenyl- $\alpha$ -methyl- $n$ -butyric acid, methyl ester, II, 50.
- 2-Ketopyrrolizidine, and its picolonate, II, 287.
- 23-Ketosarasapogenin, and its semicarbazone, II, 265.
- Ketosis, III, 475.
- blood-sugar and carbon dioxide-combining power in, in cattle, III, 409.
- dehydration and, III, 45.
- diabetic, treatment of, with sodium bicarbonate, III, 511.
- effect on, of adrenal cortical compounds, III, 596.
- fasting, relation of, to diet and liver-fat in rats, III, 333.
- to fat and protein of preceding diet, III, 836.
- in primates, III, 475.
- treatment of, in ruminants, III, 475.
- Ketostearic acid, oxidation of, in presence of alcoholic alkali, II, 187.
- Ketosteroids, excretion of, in pregnancy urine in relation to fœtus sex, III, 453.
- 17-Ketosteroids, III, 615.
- detection of, in urine, colorimetrically, III, 380.
- determination of, in urine, III, 504, 611.
- tube for, III, 280.
- excretion of, in adrenal virilism, III, 746.
- in man, III, 611.
- in ovarian failure, III, 603.
- neutral, excretion of, in pregnancy, III, 136.
- 2-Keto-5-styryl-2:3-dihydrofuran, and its derivatives, II, 148.
- 2-Keto-3-sulphamylthiazolidine, II, 153.
- 16-Ketotestosterone acetate, II, 103.
- $\alpha$ -Ketotetracosanoic acid, II, 163.
- 4'-Keto-1':2':3':4'-tetrahydro-3:4-benzpyrene-3'-carboxylic acid, methyl ester, II, 50.
- 4'-Keto-1':2':3':4'-tetrahydro-3:4-benz-3-pyrenylglyoxylic acid, methyl ester, II, 50.
- 16-Keto-11:12:13:14-tetrahydrocyclopentanophenanthrene, and its oxime, II, 318.
- 16-Keto-11:12:13:17-tetrahydro- $\Delta^{14,15}$ -cyclopentenophenanthrene, and its oxime, II, 318.
- 1-Keto-1:2:3:4-tetrahydro-2-phenanthrylacetic acid, and its methyl ester, II, 318.
- 1-Keto-1:2:3:4-tetrahydro-2-phenanthrylacetoacetic acid, ethyl ester, II, 318.
- 3-Keto-1:2:3:4-tetrahydro-6-quinoxalinyolphosphoric acid, II, 122.
- 1-Keto-2:4:6:7-tetramethyl-1:2:3:4-tetrahydronaphthalene, II, 233.
- 4:7-endoKeto-3:5:6:9-tetraphenyl-1:2:4:7:8-pentamethyl-4:7:8:9-tetrahydroinden-1-ol, II, 319.
- 4:7-endoKeto-3:5:6:9-tetraphenyl-2:4:7:8-tetramethyl-4:7:8:9-tetrahydroinden-1-one, and its 2:4-dinitrophenylhydrazone, II, 318.
- 2-Keto-3-thiol-1:6-dimethylcinchoninic acid, II, 423.
- 2-Keto-3-thiol-6-methyl-1:2-dihydrocinchoninic acid, II, 423.
- 5-Keto-2-thion-4-carbethoxy-1:3-dihydropyrimidine, and its derivatives, II, 427.
- 6-Keto-2-thion-5-phenyl-4-methylhexahydropyrimidine, II, 427.
- $\beta$ -Keto- $\alpha$ -trimethyl- $\gamma$ - $\beta$ '-dimethyl- $n$ -propyl- $n$ -heptioic acid, II, 349.
- 1-Keto-4:6:7-trimethyl-1:2:3:4-tetrahydronaphthalene, and its semicarbazone, II, 233.
- 1-Keto-4:6:7-trimethyl-1:2:3:4-tetrahydronaphthalene-2-glyoxylic acid, methyl ester, II, 233.
- 3:6-endoKeto-1:2:4-triphenyl-3:6-dimethyl- $\Delta^1$ -cyclohexene, and 5-bromo-, and 5-nitro-, II, 318.
- $\gamma$ -Keto- $\alpha\beta$ -triphenyl- $\Delta^a$ -hexenoic acid, II, 23.
- $\alpha$ -Ketoundecic acid, methyl ester, semicarbazone, II, 393.
- Kidneys, absence of, in newborn, III, 282.
- unilateral, and secondary nephritic organs in guinea-pig, III, 394.
- acid-soluble phosphorus turnover in, in rats, III, 245.
- arteriolar resistance in, afferent and efferent, III, 245.
- atrophy of, unilateral, associated with hypertension, III, 321, 735.
- blood flow in, in hypertension, III, 100.
- blood flow and glomerular infiltration rate in, effect of food on, in seals, III, 694.
- calcium deposition in, in relation to age, calcium source, exercise, and diet, in rats, III, 373.
- Kidneys, circulation in, effect of pitressin on, III, 889.
- concentration test for, with pituitary extract, III, 820.
- conversion of citrulline into arginine in, III, 331.
- cortex of, effect of pregnancy on, III, 136.
- glucose phosphorylation of extracts of, effect of phloridzin on, III, 717.
- damage to, after sulphathiazole use, III, 921.
- by uranium nitrate, effect of sodium citrate on cell regeneration and repair in, III, 771.
- effect of, on nitrogenous constituents of blood and urine density of dogs, III, 460.
- plasma-creatinine determination as test of, III, 531.
- determination in, of carbonic anhydrase, III, 460.
- diseased, clearance in, III, 245.
- effect on, of castration and testosterone, in mice, III, 126.
- of eclamptic blood, III, 313.
- of protein excretion, III, 246.
- embryoma of. See Tumours, Wilms'.
- excretion by, of creatinine, vitamin-C, and water, effect of progesterone and deoxycorticosterone on, III, 145.
- failure of, after gastric hæmorrhage, III, 898.
- fascia of, III, 865.
- function of, blood and urine composition in relation to, III, 245.
- during asphyxial ischæmia and pyrogenic hyperæmia in seals, III, 694.
- effect of acacia injection on, III, 33.
- effect of X-rays on, III, 339.
- hypertension and, III, 99.
- in blood pressure regulation in dogs, III, 460.
- sodium sulphathiazole clearance as measure of, in children, III, 897.
- tests of, III, 530.
- in normal and toxæmic pregnancy, III, 460.
- glomerular membranes of, passage of proteins through, III, 145.
- glomeruli of, capillary tuft arrangement of, in man, III, 6.
- fatty changes in, III, 32.
- filtration surface of, in rats, III, 610.
- glucose excretion by, in rabbits, III, 394.
- glyconeogenesis in, in adrenalectomised rats, III, 44.
- hæmoglobin excretion by, tubular factor in, III, 321.
- hæmorrhagic, prevention of, with choline in rats, III, 906.
- histology of, in Indian elephant, III, 508.
- in infectious diseases, III, 531.
- human, snow-capped papilla of, III, 320.
- humoral mechanism of, in hæmorrhage and shock, homeostatic rôle of, III, 898.
- hyperæmia in, from pyrogen, effect of denervation on filtration and blood flow in, III, 756.
- hypertension and, III, 441.
- in relation to cardiovascular disease, III, 205.
- infarcted, circulation in, III, 898.
- insufficiency of, phosphorus retention in children with, III, 321.
- xanthoproteic reaction in blood in, III, 321.
- lesions of, after intravenous hypertonic sucrose, III, 756.
- in newborn and stillborn infants, III, 898.
- in traumatic anuria, III, 530.
- produced by potassium-deficient diet, III, 537.
- with negative urine findings, III, 530.
- lipins in, III, 245.
- ox and pig, enzymes of, III, 342.
- pathology of, in vitamin-A deficiency in bovines, III, 460.
- pigmentation of, by psyllium and its effects on excretion, III, 320.
- relation of, to cardiovascular disease, III, 666.
- renin absence in, in marine fish, III, 878.
- renin formation in, site of, III, 580.
- resistance of, to mercuric chloride, III, 168.
- secretion in, effect on, of sulphonamides, III, 479.

**Kidneys**, secretory power of, and molecular configuration of organic compounds, relation between, in frogs, III, 694.  
size of, effect on, of deoxycorticosterone acetate and low-potassium diet, III, 897.  
thrombosis of. See Thrombosis, renal.  
tubules of, cultures from, effect on, of X-rays, III, 56.  
detection of inulin secretion by, III, 32.  
obstruction of, in myelomatosis and crush injuries, III, 320.  
vascular development of, in pigs, III, 459.  
vascularity decrease in, in man, between third and sixth decades, III, 99.

**Kidney diseases**, cancer, transplantation of, from adult frogs to tadpoles, III, 903.  
chronic, osseous lesions due to, III, 694.  
dwarfism, familial, III, 461.  
necrosis, cortical, III, 320.  
unilateral, with hypertension, nephrectomy in, III, 297.  
See also Bright's disease, Nephritis, Nephrosis, etc.

**Kidney extracts**, anaërobic, amines in, detection of, III, 820.  
blood-pressure principles of, electrophoretic separation of, in pigs, III, 611.  
blood-pressure reduction with, in hypertension, III, 54, 668.  
destruction by, of angiotoxin, hydroxytyramine, and tyramine, III, 374.

**Kinematography**, dark field, apparatus for, III, 951.  
proctoscopic, III, 818.

**Klebsiella pneumoniae**, capsule formation by, III, 65, 558.

**Kleine-Levin syndrome**, III, 741.

**Klippel-Feil syndrome**, III, 865.

**Knee-joints**, III, 725.  
of tetrapod, III, 505.

**Kohlrahi**, as source of vitamin-C, III, 763.

**Kojic acid**, iron determination with, I, 26.  
metallic salts, complex, configuration of, I, 291.

**Kolbe synthesis** with aromatic acids, II, 360.

**Kordofan Sand**, distribution of, I, 348.

**Kornerupine**, composition of, I, 123.

**Korsakow's syndrome**, anatomical basis of, III, 675.

**Kostanecki-Robinson reaction**, II, 60.

**Krypton**, isotopes of, I, 25.  
m.p.-pressure curve of, I, 89.

**Kynurenine**, constitution of, II, 362.

## L.

**Labour**, anaesthesia in, dunacaine, III, 138.  
sympathetic nerve, III, 138.  
anatomical changes during, III, 525.  
colour reaction of urine during, III, 321.  
difficult, foetal abnormalities causing, III, 361.  
effect on, of ergometrine, III, 550.  
of intravenous barbiturate, III, 549.  
of morphine, III, 549.  
of pelvis, III, 237.  
of vitamin-C lack, III, 238.  
emphysema complicating, and its cause, III, 238.  
in sportswomen, III, 138.  
induced and spontaneous, III, 388.  
induction of, by oestrogen, III, 130, 233.  
by uroselectan B, III, 314.  
with Drew-Smythe catheter, III, 236.  
long first stage in, since London bombardment, III, 454.  
premature, treatment of, with stilboestrol, III, 890.  
supernumerary breasts and, III, 313.

**Lacarnol**, effect of, on cardiac output, III, 201.

**Lacertilia**, sympathetic system of, III, 865.

**Lachrymation**, prevention and treatment of, III, 146.

**Lacquers**, nail, dermatitis from, III, 169, 275, 337, 772, 785.

**Lactamide**, density and specific heat of aqueous solutions of, I, 234.

**Lactation**, p-aminobenzoic acid and inositol in, III, 701.  
diet for, III, 765, 904.

**Lactation**, effect of, on ova implantation in rats, III, 138.  
effect on, of diethylstilboestrol, in nulliparous heifers, III, 238.  
of progesterone and deoxycorticosterone, III, 814.  
of testosterone propionate, III, 455.  
of thyroidectomy in rats, III, 594.  
of uterine distention, III, 138.  
induction of, in virgin animals, III, 315.  
irritation of, at parturition, III, 751.  
on purified diet, III, 892.  
persistent, III, 238.  
pituitary adenoma in relation to, III, 889.  
suppression of, with stilboestrol, III, 526, 602.  
with testosterone, III, 526.  
treatment of, with ultra-short waves, III, 315.

**Lactic acid**, ammonium, potassium, and sodium salts, physical properties of solutions of, I, 52.  
butyl and ethyl esters, arsenites, II, 343.  
determination of, III, 564.  
collection of blood for, III, 733.  
in blood, III, 875.  
in movement of blood-potassium, III, 199.  
lead diphenyl salt, II, 241.  
metabolism of, III, 409.  
polyneuritic convulsions from, III, 700.  
relationship of, to pyruvic acid in blood, and its use in aneurin deficiency in pigeons, III, 700.

**Lactobacillus casei**,  $\epsilon$  factor from, in nutrition of chicks, III, 621.  
growth factors for, III, 492, 493, 780.  
in relation to chick nutrition, III, 61.

**Lactobenzimidazoles**, II, 247.

**Lactoflavin**, effect of, on intestinal sugar absorption, III, 608.  
treatment with, of steatorrhoea, III, 471.  
See also Vitamin-B<sub>2</sub>.

**Lactogen**, effect on, of deoxycorticosterone, III, 27.  
in blood. See under Blood.  
in pituitary. See under Pituitary.

**$\beta$ -Lactoglobulin**,  $p_H$  dissociation curve of, III, 606.

**Lactones**, hydrolysis of, II, 2.  
simple, action of, related to cardiac aglucones, III, 709.  
study of, with dropping mercury electrodes, I, 269.  
unsaturated, effect of, on heart in frogs, III, 709.

**$\beta$ -Lactones**, mutarotation of, II, 94.

**Lactose**, detection of, with methylamine, II, 190.  
octapropionate, II, 79.  
synthesis of, and its epimeride, II, 351.

**neo-Lactose methyl 1:2-orthoacetate hexaacetate**, II, 80.

**Lactotyrisins**. See Phosphopeptones.

**$\alpha$ -Lactucic acid**, and its derivatives, II, 43.

**iso-Lactucic acid**, and its derivatives, II, 43.

**Laevalic acid**, electrolysis of, with nitrates, II, 216.

**Lagenaria leucantha**, absorption by, of chloral hydrate, III, 860.

**Lakes**, alpine, Western Canada, fauna and plankton in, III, 946.

**Lake Erie**, limnology of, I, 251.

**Lake water**. See under Water.

**Lambs**, blood picture of, with parasitic gastritis, III, 570.  
New Zealand Romney, birthcoat of, Mendelian situation in, III, 568.

**Laminagraph**, use of, in localisation, III, 714.

**Laminarin**, end-group assay for, II, 397.

**Lanatoside-C**, absorption of, III, 923.  
treatment with, of heart disease, III, 923.

**Lange reaction**, I, 361.

**Langerhans' islets**. See under Pancreas.

**Language**, development of, and emotional aspects of speech, III, 741.

**Lanthanum**, activation of, with neutrons, I, 255.

**Lanthanum hydroxide**, sols, I, 237.  
oxide, compound of sodium oxide and, I, 209.  
oxyfluoride, I, 335.

**Lanthionine**, formation of, on treatment of insulin with dilute alkali, III, 308.  
isolation of, from proteins, III, 835.

**dl- and meso-Lanthionines**, isolation of, from proteins, II, 338.

**Laparotomy**, serum  $p_H$  changes before and after, III, 198.

**Lard**, steam-rendered, nutritive properties of, III, 404.  
treatment with, of eczema and allied dermatoses, III, 332.

**Laryngotracheitis**, virus, infection by, of respiratory tract of chick embryos, III, 68.

**Latero-sensory canals**, dermal bones and, III, 227.

**Laurel**, poisoning by. See under Poisoning.

**Laurence-Moon-Biedl syndrome**, III, 449, 686.

**Lauric acid**, chromatography of, on carbon columns, I, 159.  
sodium salt, hydroxyl ion activity of solutions of, I, 99.

**1-Lauryl-2-naphthol**, II, 176.

**Lava**, Hat Creek, I, 347.  
Puy chain, minerals of, I, 284.  
tertiary, Isle of Rum, I, 347.

**Laxatives**, action of, on intestinal motility, III, 710.

**Lead**, cosmic ray absorption by, I, 36, 162.  
crystals, elasticity and creep of, I, 261.  
films, spectrum of, absorption, at low temperatures, I, 132.  
hydrogen overvoltage on, I, 101.  
isotopes of, I, 255.  
radioactive, artificial, I, 79.  
poisoning by. See under Poisoning.  
polycrystalline, electrical resistance of, I, 13.  
radium  $\beta$ -ray absorption in, I, 255.  
resistance and superconductivity of, effect of isotopes on, I, 200.  
scattering of fast neutrons by, I, 127.  
spectrum of, spark, I, 221.  
sputtered, action of ozone on, I, 209.  
thermal expansion of, I, 14, 167.

**Lead alloys**, with aluminium, I, 235.  
with aluminium, antimony, and bismuth, I, 394.  
with lithium, structure of, I, 390.  
with magnesium, I, 263.  
with mercury, solution of, periodic, in acids, I, 370.  
with sodium, I, 53.

**Lead compounds**, deposition and removal of, in soft tissues, III, 52.  
effect of preparations of, on tumours in mice, III, 151.  
excretion of, in urine, III, 145.  
of workers exposed to spray residues, III, 170.  
in foods, III, 828.  
ingestion and excretion of, in man, III, 52.  
poisoning by. See under Poisoning.  
treatment with, of polycythemia vera, III, 796.

**Lead antimony oxychloride**, structure of, X-ray, I, 355.  
arsenate, analysis of, polarographically, I, 250.  
toxicity of, III, 52.  
bromide, activity coefficients of, I, 298.  
bromide and chloride, double decomposition of thallium salts and, I, 63.  
chloride, crystals, expansion coefficients and lattice constants of, I, 321.  
chromate, colloidal, ageing of, I, 325.  
colloidal and flocculated, mixed-crystal formation of, with lead molybdate, I, 362.  
molybdate, mixed-crystal formation of, with colloidal and flocculated lead chromate, I, 362.  
monoxide, preparation and allotropic transformation of, I, 152.  
monoxides, red and yellow, heat capacity of, I, 232.  
oxides, I, 405.  
periodate, I, 246.  
sulphate, co-precipitation of copper and zinc with, I, 154.  
solubility of, I, 324.

**Lead organic compounds :—**

**Lead hexa-alkyls**, decomposition of, II, 241.  
 hexaethyl, II, 241.  
 hexamethyl, II, 241.  
 tetraphenyl, reaction of, with monobasic organic acids, II, 241.  
 spectrum of, absorption, I, 314.  
 triphenyl *p*-aminophenyl, II, 337.  
 triphenyl *p*-2-hydroxy-1-naphthylazophenyl, II, 337.

**Lead determination and separation :—**

determination in, of bismuth, I, 155.  
 determination of, by dithizone method, I, 188, 278.  
 in biological materials, III, 183.  
 in blood, III, 665.  
 in bone, polarographically, III, 788.  
 in silicate rocks, I, 307.  
 in zinc, I, 154.  
 microchemically, I, 114.  
 volumetrically, I, 376.  
 with dropping mercury cathode, III, 428.  
 with salicylaldehyde, I, 114.  
 separation of, from copper and zinc, I, 278.

**Lead ores containing zinc**, European, I, 347.

Mississippi Valley type, I, 347.

**Leather**, imitation, dermatitis due to, III, 785.

**Leaves**, area of, measurement of, III, 723.

determination in, of potassium, spectrographically, III, 278.

metabolism and respiration of, III, 500.

phycophytin formation in, III, 424.

**Lebistes reticulatus**, oestrogenic substance in, effect of, III, 812.

response of, to mammalian gonadotropins, III, 750.

secondary sexual characters of, androgenic action of pregnenolone on, III, 815.

swimbladder of, response of, to pressure, III, 101.

**Lecithin**, antihæmolytic properties of, III, 870.

choline replacement in, by arsenocholine, III, 915.

**Lecture experiments**, I, 215.

on ammonia combustion and synthesis, I, 343.

**Leg**, movements of, re-co-ordination of, in patients with transposed tendons, III, 376.

**Leguminosæ**, roots, ammonia production by nodules on, III, 786.

infection of, with *Rhizobium*, III, 74.

**Lei-kung-teng**. See *Tripterygium wilfordii*.

**Leishmania tropica**, agglutination against, after immunisation, III, 717.

transmission of, by bite of *Phlebotomus papatasi*, III, 344.

**Leishmaniasis**, cutaneous, treatment of, with Grenz rays, III, 845.

in Anglo-Egyptian Sudan, III, 642.

**Lemniscus**, medial, effect of section of, on proprioceptive functions in chimpanzees and monkeys, III, 584.

**Lens**. See under Eyes.

**Lenses**, low-reflexion fluoride films on, I, 157.

magnetic, thick, optical properties of, I, 222.

variable magnification in, III, 676.

**Lepidine**, aminoalkylamino-derivatives of, II, 36.

**Lepidine**, 5-amino-, 5-amino-2-hydroxy-, 5-bromo-, 5-chloro-, 2,5-dichloro-, 2-chloro-5-amino-, 5-chloro-2-hydroxy-, 2-chloro-5-nitro-, and 5-nitro-2-hydroxy-, II, 36, 37.

**Lepidines**, 2-chloro-, reaction of, with ammonia, II, 287.

**Lepidolites**, I, 346.

**Lepidoptera**, larvæ of, taste thresholds in, III, 115.

**Lepidosteus osseus**, skull of, dermal bone development in, III, 77.

**Lepidylamine**, derivatives of, II, 288.

**1-β-2'-Lepidylaminoethylmorpholine**, and its dihydrochloride, II, 36.

**1-β-2'-Lepidylethylmorpholine**, 1-β-6'-amino-, II, 36.

**1-β-2'-Lepidylmorpholine**, 1-β-5'-nitro-, II, 37.

**1-2'-Lepidylpiperazine**, and its hydrochlorides, and 6'-nitro-, II, 36.

**N<sup>1</sup>-Lepidylsulphanilamide**, II, 288.

**N<sup>1</sup>-Lepidylsulphanilamide**, 6-chloro-, and its N<sup>1</sup>-acetyl derivative, II, 288.

**Leprosy**, anti-drugs for, II, 282.

bacilli of. See under Bacilli.

ethers and sulphides inhibiting, II, 390.

leprous process in rats inoculated with, III, 176.

treatment of, with diphtheria toxoid, III, 646.

**Leprotene**, examination of, for provitamin-A action, III, 469.

**Leptocladine**, structure of, II, 38.

**Leptodactylus ocellatus**, convulsant attack in, III, 882.

spinal reflexes of, effect of carbon dioxide and oxygen on, III, 738.

**Leptospira icterohæmorrhagiae**, growth of, effect on, of cysteine hydrochloride and nicotinic acid, III, 557.

**Lernæocera branchialis**, binomics and physiology of, III, 696.

**Lespedeza plants**, growth of, effect of photoperiod on, III, 357.

**Lettuce**, nutrition of, molybdenum compounds in, III, 423.

**Leucine**, separation of, from methionine, II, 5.

**d-Leucine**, methyl ester hydrochloride, II, 77.

**l-Leucine**, preparation of, from protein hydrolysates, II, 189.

**l(-)-J-Leucine**, rotation and solubility of, II, 165.

**Leucocytes**. See Blood-corpuscles, white.

**Leucocytosis** in psychiatric patients, in relation to emotional state, III, 796.

**Leuconostoc mesenteroides**, dextran from, antigenicity of, III, 853.

**Leucopenia**, associated with oestrus in rats, III, 572.

**Leucopterin**, mol. wt. of, II, 152.

**Leucorrhœa**, in pregnancy, III, 236.

**Leucosis**, cell identification from, in mice, III, 401.

neutralisation of agent causing, by rabbit antiserum in fowls, III, 402.

**Leucotanshinone dimethyl ether**, and its picrate, II, 375.

**d-Leucylglycine**, cleavage of, III, 777.

**dl-Leucylglycylglycine**, methyl ester, and its hydrochloride, II, 250.

**d-Leucylglycylglycine**, cleavage of, III, 777.

**Leukæmia**, aleukæmic, III, 11.

chronic, in sisters, III, 510.

life duration, prognosis, and symptoms in, III, 872.

clinical aspects of, III, 369.

effect on, of foster nursing in mice, III, 823.

erythroblastic, III, 88.

induction of, after 9:10-dimethyl-1:2-benzanthracene application, in mice, III, 147.

lymphatic, transplantable, resistance to, in rats, III, 249.

treatment of, with X-rays, III, 11.

monocytic, III, 11, 872.

blood picture of, III, 290.

myeloid, refractory to X-ray treatment, sheep serum as sensitising agent in, III, 662.

treatment of, with placenta, vitamin-C and prontosil, III, 436.

phosphorus metabolism of blood in, III, 436.

radiophosphorus retention by tissues after death from, III, 572.

reactions like, due to diverse causes, III, 290.

retention in blood, excretion, and therapeutic effect of radio-phosphorus in, III, 436.

spleen in, III, 797.

spontaneous, genetics of, in mice, III, 464.

transmissible, cell growth of, effect of foster-nursing on, III, 150, 614.

transplantation of, in hybrid mice, III, 401.

transplanted, immunity to, rôle of antibodies in, in mice, III, 464.

urine in, specific substances in, III, 899.

**Leukosis**. See Leucosis.

**Levan**, enzymic synthesis of, III, 645.

**β-Lichanic acid**, preparation of, II, 130.

**Lichens**, depsides of, acid cleavage of, II, 350.

Indian, II, 195, 405.

**Liesegang rings**, I, 239.

**Life**, origin of, III, 246.

**Ligaments**, broad, origin of cysts of, III, 430.

cardinal, intravessel hydatiform mole and chorioepithelioma growing together in, III, 536.

**Light**, absorption of, by carbon particles, I, 9.

by spherical particles, I, 9.

absorption of heat and, by spherical particles, I, 196.

angular distribution of, scattered in liquids, I, 9.

emission of, in axis of electric fields, I, 349.

green and red, gonadal response to, in sparrows, III, 811.

infra-red. See Rays, infra-red.

monochromatic, problem of two plane waves of, I, 5.

polarisation of, by atmospheric haze, I, 196.

relativity in refractory media for, I, 38.

scattering of, by binary liquid mixtures, I, 201.

by dielectric particles, I, 353.

by emulsions, I, 316.

by gases and liquids, I, 316.

by opalescent media, polarisation in, I, 316.

by pigment particles, I, 9.

study of, I, 44.

ultra-violet, bactericidal action of, III, 57, 851.

effect of, on breast cancer incidence in mice, III, 758.

on follicular hormone, I, 312.

flashes of, effect of, on cells, III, 416.

muscle response to, III, 444.

high-intensity hydrogen arc for, I, 158.

magnetisation by, I, 14.

penetration of, into skin, as factor in carcinogenesis, III, 696.

solar and sky intensities of, in high altitudes, I, 257.

tumour induction by, in mice, III, 398.

vacuum, source for Lyman continuum in, I, 212.

velocity of, I, 127, 189.

white, anti-reflexion films on glass for, I, 212.

**Light filters**, I, 342.

polarising, colloidal hercynite for, I, 280.

**Ligia baudiniana**, diurnal pigmentary rhythm in, III, 323.

**Lignan group**, chemistry of, II, 287.

**Lignin**, and its derivatives, II, 42, 134, 143, 158, 431; III, 360.

biological decomposition of, III, 556.

chlorination of, II, 183.

detection of, in plant membranes, III, 787.

disperse chemistry of, I, 143.

distillation of, in molecular still, II, 291.

hydrolysis of volatile products from, II, 183.

maple, ethanolsol of, II, 143.

oxidation of, and of vanillin, II, 431.

solutions, molecular properties of, I, 59.

**Lignite**, N. Dakota, constituents of, I, 124.

**Lignosulphonic acid**, salts, biological decomposition of, III, 343.

sodium salt, determination of, in culture media, III, 556.

**Limbs**, phantom, after amputation, III, 302.

vasomotor changes in, in relation to sleep and sleep-readiness, III, 883.

**Lime oil**, photodynamic action of, III, 341.

**Limonin**, and its derivatives, II, 42.

**neolimonin**, II, 42.

**Limpet**, keyhole. See *Megathura crenulata*.

**Limulus**, chromatophorotropism in, III, 810.

neurosecretory cells in, III, 810.

**Limulus polyphemus**, cardiac ganglion of, acetylcholine action on, III, 769.

heart blood of, radio-phosphorus disappearance from, III, 370.

**Linaria vulgaris**, neolinarin from, II, 303.

**Linden**. See *Tilia*.

**Linein**, secretion of, by flax roots, III, 861.

**Linkings**, covalent, fission of, I, 166.

double, aromatic, fixation of, II, 135.

conjugation of, with aromatic nuclei, II, 354.

ozonisation of, in films, I, 396.

ethylenic, cleavage of by action of sulphur, II, 236.

hydration of, I, 99.

quantum theory of, I, 229.

**Linoleic acid**, preparation of, II, 46.

**Linolenic acid**, preparation of, II, 46.

- Linseed oil**, anomalous flow of suspensions of pigments in, I, 96.
- Lips**, epitheliomas of, transplantable, in catfish, III, 824.
- lower, cancer, treatment of, with rays, III, 486.
- Lipase**, serum-, in obstetrics and gynaecology, III, 292.
- Lipins**, adrenal. See under Adrenals.
- alfalfa, effect of, on sweet clover poisoning in cattle, III, 326.
- as pathogenic agents, III, 756.
- behaviour of, during brain and liver autolysis, III, 818.
- blood-. See under Blood.
- extracts of, determination in, of phosphorus, III, 428.
- extraction apparatus for, from tissues, III, 280.
- extraction of, from human liver, III, 896.
- in animal organism, III, 34.
- in duodenal mucosa of swine during fat absorption, III, 456.
- in endometrium, during menstrual cycle and pregnancy, III, 235.
- in Fallopian tubes during menstrual cycle and pregnancy, III, 140.
- in fasting mouse, III, 609.
- kidney. See under Kidneys.
- liver. See under Liver.
- metabolism of. See under Metabolism.
- plasma-. See under Blood-plasma.
- protein complexes with, III, 463.
- serum-. See under Blood-serum.
- Lipoic acid**, effect of administration of, in rabbits, III, 703.
- Lipochondroplasia**. See *Dysostosis multiplex*.
- Lipophilia**, in aetiology of obesity, III, 766.
- Lipotropic substances**, III, 704.
- Lipoxidase**, II, 73.
- Lipstick**, liquid, dermatitis due to, III, 552.
- Liquids**, adhesion of, to solids, and spreading pressure, I, 325.
- adsorbed on solids, infra-red reflexion of, I, 196.
- associated, viscosity of, I, 168.
- autosorption at boundaries of vapours and, I, 202.
- binary, region of critical solution of, I, 140.
- thermodynamic theory of solutions of, I, 146.
- chemical morphology of, I, 10, 139.
- Clusius separation in, I, 51.
- concentration of solutions of liquids in, I, 276.
- corrosive, distillation apparatus for, I, 282.
- crystalline, aromatic, side-chain, II, 361.
- density of, pyknometrically, I, 392.
- density and entropy of vapourisation of, I, 233.
- easily-emulsified, extraction of, with immiscible solvents, I, 282.
- elastic moduli and viscosity of plastics and, I, 292.
- extraction of, with liquids, I, 294.
- "fixed structure" of, I, 84.
- formation of gas bubbles in, I, 55.
- friction between wetted solids and, I, 19.
- Kerr effect and molecular order in compressed gases and, I, 9.
- light scattering by, I, 9, 44, 316.
- low-boiling, production of, I, 214.
- mixed, binary, freezing of, I, 267.
- light scattering by, I, 201.
- tie line correlation of distribution of solute between, I, 298.
- vapour pressures of, I, 90.
- viscosity of, I, 90, 168.
- propagation of supersonic waves in, I, 201.
- ternary, partial pressures of, and prediction of tie lines, I, 298.
- vapour pressure curves of, I, 168.
- mobile, light scattering in, I, 316.
- morphology of, I, 51.
- nomograph for angles of lenses of, I, 264.
- organic, carriers for, I, 159.
- heat capacity of, I, 200.
- supercooled, crystallisation of, I, 176.
- swelling of rubber in, I, 362.
- viscosity of, I, 89.
- nomographs for, I, 89.
- Liquids**, organic, volatile, spreading pressures of, on water, I, 236.
- polar, dispersion in, of ultra-short waves, I, 353.
- polar and non-polar, relaxation times in mixtures of, I, 168.
- properties of, discontinuities in, I, 322.
- radial distribution in, I, 318.
- solutions of gases in, I, 90.
- sound-wave pressure in, I, 48.
- spectra of, infra-red, I, 132.
- Raman, I, 195.
- structure of, in capillary layer, I, 325.
- structure and dynamics of, I, 292.
- surface tension of, I, 360, 396.
- and coefficient of compressibility, I, 10.
- effect of temperature on, I, 10.
- surface tension and viscosity of, I, 357.
- ultrasonic absorption in, I, 14.
- velocity of sound in, I, 14, 138.
- and molecular volume, I, 356.
- viscosity of, I, 140.
- constitution and, I, 89.
- in homologous series, I, 322.
- in relation to sound velocity, I, 392.
- in relation to temperature, I, 50, 233, 357.
- mol. wt. and, I, 293.
- viscous, laboratory stirrers for, I, 214.
- light scattering in, I, 316.
- volatile, identification of, II, 243.
- Liquid**, stabilisation of nesslerised solutions by, III, 503.
- Lissemys punctata punctata*, shell and closure mechanism in, III, 395.
- Lithium**, nuclear levels of, I, 255.
- X-ray reflexion and elastic anisotropy of, I, 135.
- solubility of, in its melted chloride, I, 54.
- structure of, I, 14.
- thermal energy of, I, 226.
- Lithium alloys** with lead, structure of, I, 390.
- Lithium salts**, effect of, on cultivated plants, III, 654.
- in tumours, in relation to slow neutron therapy, III, 151.
- Lithium aluminium sulphate**, hydrate, I, 180.
- chloride, action of fast hydrogen ions on, I, 78.
- equilibrium of, with dioxan, and water, I, 267.
- chloride and nitrate, mixtures of, with the sodium salts, I, 63.
- fluoride, crystals of, for ultra-violet spectroscopy, I, 180.
- refractive index of, I, 9.
- hydroxide, electrolytic conductivity of, I, 240.
- oxide, equilibrium of, with beryllium and boron oxides, I, 398.
- Lithium organic compounds**, reaction of, with alkyl and aryl halides in presence of metallic halides, II, 67.
- Lithium alkyls**, reactivities of, II, 41.
- tert.*-butyl, II, 67.
- p*-nitrophenoxide, II, 281.
- phenyl, isomerisation of benzyl ethers by, II, 358.
- Lithium determination**:-
- determination of, in presence of potassium and sodium, I, 277.
- polarographically, I, 340.
- epialloLithocholic acid*, See *3- $\alpha$ Cholic acid*.
- 3- $\beta$ -hydroxy-*.
- Litsea longifolia*, seed fat of, III, 655.
- Liver**, adult and fetal, unsaponifiable matter from, III, 755.
- allergic focal necrosis of, III, 652.
- anti-anemic, concentrates of, assay of, by bone marrow, III, 632.
- anti-anemic principle of, test for activity of, III, 871.
- arginase in, on hormone administration, III, 687.
- atrophy of, in pregnancy, III, 530.
- autolysis of, lipin behaviour during, III, 818.
- biliary tract and, III, 754.
- blood-protein and colloid-osmotic pressure variations due to ultra-acoustic sound waves on, III, 437.
- butyrate oxidation by, effect of glycogen on, III, 475.
- Liver**, calcium and magnesium distribution between cells and fluids of, in dogs, III, 462.
- carbohydrate metabolism in, III, 44.
- catalase. See under Catalase.
- cells, bile and glycogen formation and storage in, effect of X-rays on, III, 610.
- binucleate, effect of vitamin-D on, III, 458.
- binucleate and mononucleate, origin of, in rats, III, 792.
- cytoplasmic inclusions in, of protein-injected rats, III, 529.
- Kupffer stellate, reducing agents in, after adrenalectomy in rats, III, 693.
- mitochondria in, in rats, III, 189.
- nuclei, glycogen infiltration of, III, 792.
- phosphatase of, in normal rats and those on diet containing aminoazotoluene, III, 318.
- stellate, effect of detergent on, in frogs, III, 754.
- changes in, induced by '3:4:5:6-dibenzcarbazole', III, 398.
- chemical analysis of, in relation to its vitamin-A potency, III, 829.
- composition of, III, 693.
- l*(-)-cysteic acid decarboxylase in, in dogs, III, 818.
- damage to, and plasma-prothrombin concentration, III, 693.
- bacterial infection in relation to, III, 31.
- fat metabolism after, III, 318.
- severe, differentiation of, from surgical jaundice, III, 458.
- vitamin-A distribution in, III, 908.
- deficiency of, hippuric acid test and Takata-Ara reaction in investigation of, III, 755.
- determination in, of catalase, volumetrically, III, 698.
- of pantothenic acid, III, 832.
- detoxicating hormone of. See *Yakriton*.
- effect on, of anaesthetics, III, 31.
- of cinchophen, III, 31.
- of eclamptic blood, III, 313.
- of oestradiol and stilboestrol, III, 132.
- of oestrogens, III, 693.
- of visible light, after carbon tetrachloride treatment in rabbit, III, 319.
- efficiency of, prothrombin test for, III, 896.
- excreting power of, bilirubin measure for, III, 243.
- fats of, of hypophysectomised rats on high-carbohydrate and -fat diets, III, 686.
- fat-water relationship in, and phospholipin fractionation, III, 609.
- fatty, and glucose tolerance in rats, III, 457.
- choline-oxidase activity of, III, 818.
- oxygen consumption and ketone-body production in, due to carbon tetrachloride or phosphorus, III, 818.
- fatty and fibrotic, production of, by diet in guinea-pigs and rabbits, III, 144.
- fatty changes in, III, 693.
- fetal, vitamin-A content of, relation of *Brucella abortus* infection to, III, 538.
- function of, and hippuric acid formation, III, 896.
- effect on, of alcoholic intoxication, III, 609.
- of light, III, 341.
- of vitamin-K, III, 394.
- impaired, plasma-amino-acid retention in hypoproteinæmic dogs as evidence of, III, 733.
- in hepatolenticular degeneration, III, 673.
- in relation to medical progress, III, 529.
- tests for, III, 458, 529.
- blood-iodine, III, 609.
- bromsulphthalein, III, 818.
- for small animals, III, 818.
- hippuric acid, III, 818.
- p*-hydroxyphenylpyruvic acid, III, 457.
- kephalin-cholesterol flocculation, III, 609.
- sulphanilamide acetylation as, III, 896.
- glucose formation in, III, 836.
- glycogen in, adrenaline treatment in relation to, III, 332.
- after partial hepatectomy, III, 157.
- effect on, of corticosterone and pituitary hormone, in adrenalectomy, III, 121.
- of hormones, III, 31.

- Liver**, glycogen in, histological versus chemical analysis of, III, 433.  
in man, III, 31.  
metabolism of, effects of adrenal and thyroid hormones on, III, 746.  
storage of, effect of *dl*-lysine hydrochloride on, III, 331.  
granulomatosis in, in rats, III, 897.  
hemorrhage of, in newborn, III, 31.  
in stillborn and newborn infants, III, 318.  
histamine in, effect on, of anaphylactic shock, III, 50.  
in chloroform and phosphorus poisoning, III, 897.  
isolated, glycogenolysis in, III, 244.  
lamb and ox, catalase from, III, 640.  
lipins in, effect on, of caseinogen, cystine, and methionine, III, 608.  
of choline, cystine, ethanolamine, guanidoacetic acid, homocysteine, and serine, in rats, III, 755.  
of 2:4-dinitrophenol, in mice, III, 458.  
extraction from, in man, III, 896.  
non-saponifiable, in cancerous and non-cancerous cases, III, 31.  
normal and tumour-bearing, nucleoprotein composition of, III, 401.  
parenchyma of, treatment of, III, 897.  
perfused, effect on, of caffeine, III, 529.  
urea formation in, in rats, III, 529.  
phospholipin in, synthesis and breakdown of, III, 318.  
phosphorus in, acid-soluble, effect of fasting, epinephrine, and insulin on, III, 818.  
protective action on, of xanthine and other insoluble substances, III, 819.  
radiophosphorus uptake by, III, 159.  
radium and uranium in, in ox, III, 901.  
regeneration of, in rats at different ages, III, 819.  
riboflavin content of, III, 762.  
slices, glycuronic acid production by, from rats fed dimethylaminoazobenzene, III, 458.  
metabolism of, and body size, III, 541.  
tissues of, ectopic, in newborn, III, 318.  
normal and cancerous, activity of amylase, catalase, and xanthine dehydrogenase in, III, 150.  
toxicity of, in anaesthesia, III, 632.  
vitamin-A in, comparison of, with plasma-vitamin-A in man, III, 829.  
distribution of, III, 144.  
effect of ethyl alcohol and tricesol on, in chicks, III, 620.  
in cattle, pigs, and sheep, III, 619.  
return of, after depletion by methylcholanthrene in rats, III, 469.  
storage site of, III, 38.  
vitamin-A and carotene in, in man, III, 31.  
weight of, effect of pituitary on, in hypophysectomised rats, III, 598, 747.  
xanthine-oxidase activity in, in riboflavin deficiency in rats, III, 39.  
of cancer-susceptible and cancer-resistant mice, III, 400.
- Liver disease**, after recovery from catarrhal jaundice, revealed by bilirubin test, III, 819.  
cancer, aetiology of, in Bantu, III, 152, 616.  
due to butter-yellow, inhibiting action of  $\beta$ -sitosterol on, III, 463.  
due to dimethylaminoazobenzene, protection against, by riboflavin with casein, III, 150.  
primary, in haemochromatosis, III, 536.  
in infancy, III, 904.  
pathology of, in Bantus, III, 536.  
chronic, thiamin excretion in, III, 154.  
cirrhosis, dietary, production of, in rabbits, III, 609.  
treatment of, in rats, III, 244.  
due to carbon tetrachloride, III, 319, 897.  
effect of, on intrahepatic blood circulation, III, 609.  
histogenesis and repair of, in rats, III, 755.  
in animals, caused by *Senecio* alkaloids, II, 66.
- Liver disease**, cirrhosis, in rats on fat-rich and protein-poor diets, III, 819.  
infantile, III, 897.  
kephalin flocculation test in, III, 144.  
Laënnec, III, 896.  
vitamin-A deficiency in, III, 829.  
pernicious anaemia during, III, 871.  
portal, with ascites, prognosis and treatment of, III, 819.  
prevention of, by choline in rats on high-fat-low-protein diets, III, 318.  
production and prevention of, in rats, III, 458.  
serum-proteins in, III, 609.  
treatment of, by amino-acids parenterally administered, III, 897.  
by diet and vitamin-B complex supplements, III, 244.  
coproporphyrin excretion in, III, 755.  
diagnosis of, by punch biopsy, III, 31.  
tyrosine in blood filtrate in, III, 609.  
haemangi endothelioma, malignant, transplantable, in mice, III, 697.  
hepatitis, acute, of alcoholism, III, 319.  
arsenical, III, 551.  
toxic, due to cinchophen, III, 484.  
necrosis, effect of vitamin-B deficiency on, III, 819.  
in haemochromatosis, III, 319.  
prevention of, by cystine and choline in rats, III, 897.  
plasma-lipins in, III, 530.  
serum-phosphatase activity in, III, 609.  
treatment of, with carbohydrates in diabetic patients, III, 694.  
tumours, catalase activity in, and effect of tumour extirpation, in rats, III, 400.  
development of, effect of dietary cystine on, in rats fed butter-yellow, III, 824.  
due to butter-yellow, in rats, III, 398.  
due to carbon tetrachloride, in mice, III, 398.  
effect of anticarcinogenic dyes on incidence of, III, 463.  
effect of diet on production of, III, 463.  
experimental, inhibitory action of methylene-blue on, III, 463.  
formation of, in relation to diet, III, 398.  
induced and spontaneous, mitochondria and Golgi apparatus of, in mice, III, 824.  
pathology of, in rats, III, 824.  
proteinase and peptidase activities of, in rats, III, 400.  
transplantable, pathology of, in mice, III, 824.  
urobilinogen tests in, III, 319.  
vitamin-A deficiency in, III, 459.  
yellow atrophy, after sulphanilamide therapy and avertin anaesthesia, III, 546.  
pathology of, in obstetrics, III, 319.
- Liver extracts**, cell-free, carbon dioxide assimilation in, III, 623.  
concentrated, treatment with, of anaemia, III, 11.  
prevention with, of neurone degeneration in pigs, III, 379.  
sensitivity to, prevention of, by histaminase, III, 661.  
treatment with, of acne vulgaris in tuberculous case, III, 928.
- Liver-stomach concentrate**, treatment with, of gastritis, III, 607.
- Lizard**, female, effect on, of pituitary extracts, III, 522.  
See also *Cnemidophorus sexlineatus*.
- Llaveiella taenechina**, meiotic chromosomes of, III, 284.
- Loa loa**, epidemiology and incidence of, in the Sudan, III, 347.
- Lobeline**, circulation time of, effect of barbituric acid derivative on, III, 550.  
 $\alpha$ -Lobeline, measurement with, of circulation time, III, 734.
- Loco weeds**, III, 950.
- Löllingite**, Philippine Islands, I, 346.
- Lolium perenne**, alkaloids from, II, 182.
- Longilobine**, action of, III, 771.
- Loschmidt's number**, I, 318.
- Lubricants**, ether-insoluble, for stopcocks, I, 214.
- Lubrication**, boundary, physical aspects of, I, 51.  
theory of, I, 322.
- Lucerne**, leaves, lipins of, III, 722.
- Lucerne-leaf meal**, lipins from, III, 359.
- Luciferase**, denaturation of, reversible, III, 555.
- Luciferin**, *Cypridina*, reaction of, with azides, III, 716.
- Lucigenin**, luminescence of, I, 314.
- Lucilia cuprina**, larvæ of, ammonia production by, III, 256.  
See also Flies, blow.
- Lucuma salicifolia**, III, 55.
- Lückenschädel**, III, 789.
- Lumbar puncture**. See under Puncture.
- Lumiauxone**, experiments with, III, 861.
- Luminal**, treatment with, of epilepsy, serum-choline-esterase changes after, III, 412.
- Luminescence**, fatigue effect in, I, 352.  
fluorometers for, I, 116.
- Luminol**, catalysts for light production with, I, 245.  
detection with, of hydrogen peroxide, copper, iron, and cyanides, I, 153.  
of peroxides, I, 375.  
luminescence of, I, 277, 352.
- Lummer plates**, reduction of fringes of, I, 75.
- Lungs**, alveoli of, histophysiology of, III, 879.  
anaphylactic inflammation of, III, 70.  
blast injury of, III, 298.  
blood-perfused, isolated, adrenaline bronchoconstriction in, III, 450.  
calcified nodules in, in relation to coccidioidomycosis, III, 850.  
cavities of, treatment of, with paraffin depots, III, 103.  
crystalline material in, III, 758.  
development of, and nature of alveoli, III, 283.  
dust in, III, 880.  
effect on, of rays, III, 930.  
fibrosis of, due to syphilis, III, 802.  
foetal, development of, III, 283.  
emboli of brain tissue in, III, 218.  
gas mixtures in, and emptying rate, III, 102.  
gaseous exchange between, and blood circulation, III, 297.  
growth of, arrested, in wasting infant, III, 207.  
in healthy and sick infants, III, 442.  
new, III, 536.
- Lesions** in, calcified, epidemiology of, III, 207.
- Lobation** of, in man and monkey, III, 725.  
in mice, III, 568.
- Non-silicotic**, silicon in, III, 773.
- Parenchyma** of, electrolyte, composition of, studied by wet ashing method in dogs, III, 438.
- Right**, congenital absence of, III, 186.
- Staphylococcal infections** of, treatment of, with sulphathiazole, III, 410.
- Thromboplastic protein** from, electrophoresis of, III, 57.
- Ventilation** in, in health and disease, III, 735.
- Lung diseases**, adenomata, effect of dust on incidence of, in mice, III, 464.  
cancer of, associated with pulmonary abnormalities, III, 825.  
incidence of, III, 403.  
primary, treatment of, by pneumonectomy, III, 207.  
treatment of, with irradiation, III, 714.
- Cystic**, congenital, epithelial metaplasia in, III, 617.
- Tumours**, alveolar cell, in man, III, 617.  
due to carcinogenic hydrocarbons, III, 696.  
due to 3:4:5:6-dibenzcarbazole, III, 398.  
effect of dusts on, in mice, III, 758.  
prevention of, by X-rays, III, 339.  
susceptibility to, and genes, in mice, III, 400.  
transplantation of, III, 697.
- Lungfish**, African. See *Protopterus aethiopicus*.
- Lupanal**, dihydroxy-, and its oxime, II, 266.
- Lupane derivatives**, surface films of, II, 60.
- Lupane**, trihydroxy-, triacetyl derivative, II, 266.
- Lupanediol**, II, 60.
- Lupanetriol acetate**, II, 60.
- Lupanonitrile**, dihydroxy-, diacetyl derivative, II, 266.

**Lupenal**, dihydroxy-, and its diacetyl derivative and oxime, II, 266.  
**isoLupene**. See **isoBetulin**.  
**Lupenediol**, and its acetates, II, 60.  
 **$\mu$ -Lupenol**, and its acetate, II, 60.  
**Lupenonitrile**, dihydroxy-, diacetyl derivative, II, 266.  
**Lupeol**, constitution of, II, 60.  
**Lupin alkaloids**, action of, on uterine motility, III, 165.  
*Lupinus albus*, seeds, effect of rotation on, III, 785.  
**Lupus erythematosus**, disseminated, pathology of, III, 246.  
 treatment of, with bismarsen, III, 413.  
**Luteophosphotungstic acid**, structure, formation, and properties of, I, 275.  
**Lycopodine**, and its perchlorate, II, 291.  
 degradation of, II, 386.  
**Lycopodium** alkaloids, II, 291, 386.  
*Lycopodium complanatum*, alkaloids of, II, 291.  
*Lycopodium saururus*, alkaloids from, II, 336.  
**Lygranum**, Frei tests with, III, 943.  
*Lymantria*, sex-determination in, III, 676.  
**Lymph**, cardiac and cervical, flow and composition of, effect of blood-oxygen and blood-carbon dioxide on, III, 199.  
 cervical, flow and composition of, effect of carbon monoxide anoxæmia on, III, 199.  
 production of, during histamine shock, III, 199.  
 flow of, effect of irradiation on, in rats, III, 13.  
 from lungs of dog, III, 733.  
**Lymph follicles**, accumulations of, in digestive tract, III, 817.  
**Lymph glands**, X-ray treatment of, in sarcomatous rabbits, III, 325.  
**Lymph nodes**, development of, in fat, III, 728.  
 effect on, of castration, thyroidectomy, and replacement therapy in rats, III, 594.  
 lipomelanotic reticular hyperplasia of, III, 436.  
 lymphoid cells of bone marrow and, in guinea-pigs and rabbits, III, 731.  
 tumours in, III, 36.  
**Lymphadenoma**, abdominal, III, 291.  
**Lymphadenopathy**, follicular, giant, III, 199.  
**Lymphatics**, cutaneous, linear flow rate in, effect of X-rays on, in man, III, 374.  
 gall-bladder and liver, III, 319.  
 omental, aberrant function of, in omental-jejunal adhesions, III, 1.  
 permeability of, after irradiation with visible light, III, 340.  
**Lymphoblastoma diseases**, radiotherapy of, III, 56.  
**Lymphocytes**, cytology of, in human peripheral blood, III, 872.  
 effect on, of enterectomy, III, 89.  
 of radio-phosphorus, III, 197.  
 response of, to X-rays, III, 797.  
**Lymphogranuloma**, antigens, reaction of, with trachoma sera, III, 856.  
**Lymphogranuloma venereum**, III, 354.  
 antigen for, III, 857.  
 Frei tests in, III, 943.  
 rectum stricture due to, treatment of, with sodium sulphaniylsulphanilate, III, 839.  
 treatment of, with sulphaniilamide and sulphaniylguanidine, in mice, III, 920.  
 with sulphonamides, III, 545, 707.  
 virus of, action on, of ether and urea, III, 650.  
 of sulphonamides, III, 628.  
 and of meningopneumonitis and psittacosis, III, 561.  
 antigenic relationship of, to meningopneumonitis virus, III, 650.  
**Lymphoma**, malignant, III, 826.  
 **$\alpha$ -Lyrae**, spectrum of, I, 310.  
 **$\beta$ -Lyrae**, spectrum of, I, 222.  
**Lysine**, requirement of, for chicks, III, 618.  
**Lysine**, hydroxy-, determination of, in proteins, II, 184.  
***dl*-Lysine hydrochloride**, effect of feeding of, on liver-glycogen storage and excretion of acetone bodies, III, 331.

***l*(+)-Lysine**, action on, of liver and kidney slices, III, 541.  
 stability of, in rats, III, 42.  
 studied with deuterium and heavy nitrogen, II, 4.  
**Lysozyme**, lytic and bactericidal activities of, action of sulphonamides on, III, 545.

## M.

**M. & B. 693**, treatment with, of *Brucella abortus* infection in guinea-pigs, III, 410.  
**M. & B. 800**. See **88'-Diamidino- $\alpha$ -diphenoxypentane**.  
*Macaca mulatta*, acoustic area of, III, 592.  
 corpus callosum and anterior commissure in, cortical origin and distribution of, III, 517.  
 milk of, III, 389.  
 organisation and termination of fibres of posterior columns in, III, 738.  
*Macacus rhesus*, syndrome in, after inoculation from carriers of poliomyelitis virus, III, 720.  
*Macraura pomifera*, pigments from, II, 243.  
**Macneven**, W. J., notebooks of, I, 215.  
*Macrocytis pyrifera*, analysis of, III, 786.  
**Macroglia**, in brain tumours, III, 303.  
**Macroglossia**, muscular, III, 186.  
**Macromolecular compounds**. See under **Compounds**.  
**Macrophages**, cell-divisions of, III, 84.  
 foci of, in pleura of mammals, III, 83.  
*Macrozamia spiralis*, toxic principle from seeds of, II, 38.  
**Macrozamin**, II, 38.  
**Macula lutea**, degeneration of, familial, III, 681.  
**Magnas**, ores and, I, 348.  
**Magnesia**. See **Magnesium oxide**.  
**Magnesite**, heat of formation of, I, 367.  
**Magnesium**, ions, blood-level of, in relation to lethal anaesthesia, III, 711.  
 nuclear photo-effect on, I, 128.  
 $\gamma$ -rays excited in, by polonium  $\alpha$ -particles, I, 33.  
 reaction of, with alcohols, esters, and halogens, II, 246.  
 spectrum of, spark, I, 221.  
 thermal energy of, I, 226.  
**Magnesium alloys**, with aluminium, I, 53.  
 with aluminium and iron, I, 18.  
 with aluminium and silicon, I, 18, 53.  
 with antimony and copper, I, 394.  
 with cerium and manganese, and with manganese, I, 394.  
 with lead, tin, or Group III B metals, I, 263.  
 with mercury, crystal structure of, I, 290.  
 with silver, use of, as secondary-electron emitting electrodes, I, 342.  
**Magnesium compounds**, absorption of, effect of protein intake on, III, 906.  
 balance of, in infants, III, 405.  
 deficiency of, effect of, on dentine and incisor eruption in rats, III, 828.  
 on vago-insulin and sympathetico-adrenal system excitability, III, 537.  
 in calves, III, 906.  
 requirement of, for chicks, III, 828.  
 for pre-school children, III, 153.  
 serum-. See under **Blood-serum**.  
 with Group IV B elements, I, 205.  
**Magnesium aluminium hydroxide**, I, 274.  
 bromide, action of, on circulation, III, 926.  
 carbonate and hydrogen carbonate, dissociation of, I, 145.  
 chloride, as narcotic for marine invertebrates, III, 770.  
 carbonate effect in titration of, with alkali hydroxide, I, 267.  
 compounds of, with sodium chloride, I, 240.  
 viscosity of solutions of sodium chloride and, I, 52.  
 difluoride, heat of formation of, I, 330.  
 hydroxide, autoclave treatment of, I, 237.  
 nitrate, calorimetry of aqueous solutions of, I, 175.  
 oxide, equilibrium of, with zirconia, I, 174.  
 spectrum of, infra-red, I, 212.

**Magnesium sulphate**, effect of, on coronary vessels, III, 841.  
 on sphincter of Oddi in man, III, 754.  
 treatment with, of nephritic convulsions intravenously, III, 711.  
 sulphide, oxidation of, by carbon dioxide, I, 334.  
 thiosulphate, preparation of, I, 334.  
 vanadate, preparation of, I, 334.  
**Magnesium organic compounds**, symmetrical, preparation of, II, 241.  
**Magnesium allyl bromide**, use of, in Grignard reaction, II, 430.  
 aryl bromides, electrolysis of, in ethyl ether, II, 84.  
 butenyl bromide, reaction of, with dioxan, II, 293.  
*tert*-butyl chloride, reaction of, with propylene oxide, II, 72.  
 cyclohexyl chloride, reaction of, with isoprene and *aay*-trimethylbutadiene hydrochlorides, II, 185.  
 methyl bromide, reaction of, with benzophenone and isophorone, II, 12.  
 methyl iodide, reaction of, with rhenium trichloride, II, 41.  
 phenyl bromide, reaction of, with  $\beta$ -isodurylaldehyde cyanohydrin, II, 407.  
 with 1-phenylisatin, II, 423.  
**Magnesium determination**—  
 determination of, gravimetrically, I, 376.  
 oximetrically, I, 340.  
 with 8-hydroxyquinoline, I, 409.  
**Magnesiylindoles**, syntheses with, II, 423.  
**Magnets**, combined with dilatometer, I, 412.  
**Magnetic materials**, testing of, with cathode-ray oscillograph, I, 378.  
 moments, at high frequencies, I, 85.  
 susceptibility, effect on, of hydrogen bond, I, 354.  
 statistical computation of, I, 13.  
**Magnetisation**, by ultra-violet light, I, 14.  
 near boundaries, I, 260.  
**Magnetism**, catalysis and, I, 177.  
 molecular structure and, I, 318.  
 relation of, to induction, expression of, I, 350.  
 thermodynamics and, I, 392.  
**Magnetite**, crystals, effect of magnetic field on electric resistance of, I, 136.  
 origin of, in Mayurbhanj State, Orissa, I, 76.  
**Magnetochemical investigations**, I, 261.  
**Magnetrons**, theory of, I, 381.  
**Maize**, effect of X-rays on, III, 73, 862.  
 sterols from, III, 863.  
 threonine in, II, 123.  
**Maize meal**, fermentation of, III, 852.  
**Maize starch**. See under **Starch**.  
*Makale veru*. See *Decalepis hamiltonii*.  
**Malachite**, heat of formation of, I, 367.  
**Malaria**, Henry's test for, in pregnancy and in new-born, III, 175.  
 in British Guiana, III, 347.  
 lesion production in, rôle of ferrihaemate in, III, 661.  
 oedema of, hypoalbuminæmia in relation to, III, 291.  
 on China-Burma highway, III, 175.  
 parasites of, in blood films, III, 175.  
 respiratory metabolism of, III, 556.  
 survival of, III, 850.  
 paroxysm, ferrihaemate in, III, 436.  
 therapeutic, avoidance of complications in, III, 347.  
 transmission of, due to blood transfusion, III, 10.  
 treatment of, with promin and sulphapyrimidine, III, 479.  
 with sulphonamides in ducks, III, 545, 768.  
 with thiazole derivatives of sulphanilamide in monkeys, III, 840.  
**Maleic acid**, alkyl esters, co-polymerisation of, with alkyl acrylates, II, 391.  
 catalysed isomerisation of, to fumaric acid, I, 149.  
 ethyl ester, addition of, to styrenes, II, 53.  
 amine-catalysed isomerisation of, I, 149.



- Maleic anhydride**, addition of, to caryophyllene, II, 370.  
to styrenes, II, 53.  
condensation of, with anethole and with styrene, II, 354.  
with naphthyl methyl ethers, II, 261.  
reaction of, with unsaturated fatty acid esters, II, 186.
- Malignite**, Poohbah Lake, Ontario, I, 345.
- Malnutrition**, marginal, glucose-tolerance test in, III, 542.  
with pellagra and neuritis, effect of yeast- and muscle-adenylic acid in, III, 539.
- Malonamide**, condensation of, with formaldehyde, II, 350.
- Malonbisphenylhydrazide**, II, 215.
- Malonic acid**, behaviour of, in animal body, III, 543.  
condensation of, with aldehydes, II, 97, 256.  
with nitrobenzaldehydes in presence of organic bases, II, 256.  
diethyl ester, condensation of, with 2-methylenecyclohexanone, II, 409.  
phenyl-substituted derivatives, ethyl esters, dipole moments of, I, 227.  
reaction of, with 5:5-dibromo-4-hydroxyhydro-uracil, II, 32.  
salts, effect of, on brain respiration of rats, III, 834.
- Malonic acid**, bromo-, ethyl ester, reaction of, with ethanolamine, II, 298.
- Maltose**, detection of, with methylamine, II, 190.  
determination of, with takadiastase, III, 863.  
fermentation of, alkaline, III, 490.  
hydrate, preparation of, II, 133.  
octapropionate, II, 79.
- iso*Maltose, formation of, from glucose, II, 133.
- $\beta$ -Maltose** azobenzene-4-carboxylate, II, 395.
- Mammæ**. See Glands, mammary.
- Mammals**, organism of, evolution of function of, III, 322.
- Mammary glands**. See under Glands.
- Man**, amino-acids and, III, 760.  
history of, African discoveries relating to, III, 189.  
life and death of, at high pressures, III, 297.
- Manatee**. See *Trichechus latirostris*.
- Mandelic acid**,  $\beta$ -piperidinoethyl ester, salts, II, 237.  
*isopropyl* ether, and its *p*-phenylphenacyl ester, II, 421.  
treatment with, in typhoid fever, III, 545.
- l*-Mandelic acid**, separation of, from the *d*-form, I, 337.
- Mandelohydrazides**, II, 18.
- Mandibles**, development of, III, 3.  
See also Jaws, lower.
- Mandragora***, roots, non-alkaloidal constituents of, II, 343.
- Manganates**. See under Manganese.
- Manganese**, co-precipitation of, with barium sulphate, I, 154.  
distribution of, in ores, I, 115.  
heat content of, at high temperatures, I, 398.  
in soils of Sao Paulo, I, 412.  
 $\gamma$ -rays from, I, 128.
- Manganese alloys**, with cerium and magnesium and with magnesium, I, 394.  
with copper, conductivity and hardness of, I, 53.  
with niobium, tantalum, titanium, and zirconium, structure of, X-ray, I, 354.
- Manganese compounds**, deficiency of, in rats, III, 619.  
poisoning by. See under Poisoning.
- Manganese carbide**, heat content of, I, 392.  
hydride, spectrum of, band, I, 351.  
dioxide, determination of, thermoanalytically, I, 410.  
periodate, I, 246.
- Trimanganese tetroxide**, heat content of, I, 392.
- Manganous ions**, kinetics of reaction of, with permanganate ions, I, 207.
- Manganous salts**, action of sodium silicate on, I, 406.
- Manganous fluoride**, heat capacity of, I, 392.  
hydroxide, autoxidation of, I, 402.  
nitrate, equilibrium of, with water, I, 329.
- Manganese compounds** :—  
**Manganous nitrate**, thermal properties and vapour pressure of aqueous solutions of, I, 330.  
oxide, heat content and heat of formation of, I, 398.  
silicate, heat content of, I, 392.  
specific heat of, at low temperatures, I, 50.  
sulphate, heat content and heat of formation of, I, 398.  
sulphates, I, 328.
- Manganates**, determination of, in presence of cupric salts, I, 339.
- Permanganates**, action of hydrogen sulphide on, I, 70.  
stability of colour of periodates and, I, 119.
- Manganese, detection and determination** :—  
detection of, in presence of chlorides, I, 72.  
reagents for, I, 376.  
determination of, I, 377.
- Manganese ores**, containing tungsten, of Golconda, Nevada, I, 218.  
of Costa Rica, I, 218.  
of Olympic Peninsula, Washington, I, 218.
- Mangifera indica***, Badami and Raspuri varieties, analysis of, III, 862.  
catalase activity in, III, 72.
- Mangoes**, propagation of, by auxin treatment, III, 74.  
See also *Mangifera indica*.
- Mangroves**, ecology of, III, 859.
- Manihot palmata***, amylase in, III, 279.
- Maniladiol**, constitution of, II, 201.
- Maniladione**, and its derivatives, II, 201.
- Manis pentadactyla***, diencephalon of, unrecorded nucleus in, III, 109.
- iso*Mannide dinitrate, II, 215.
- Mannitoferric acid**, constitution of, I, 405.
- Mannitol**, metabolism of. See under Metabolism.  
hexanitrate, pharmacology of, III, 484.
- Mannitozinconic acid**, constitution of, I, 405.
- D*-Manno-*D*-galactoses**, II, 218.
- D*-Mannosaccharodibenzimidazole**, and its derivatives, II, 248.
- D*-Mannosan** < 1, 5 >  $\beta$  < 1, 6 >, derivatives of, II, 303.  
preparation of, from  $\beta$ -phenyl-*D*-mannoside, II, 351.
- D*-Mannose**, pentapropionate, II, 79.
- Manometers**, electrical capacitance diaphragm, III, 296.  
membrane interferometer, I, 282.  
photo-electric membrane, III, 723.
- Manometer-manostat** to control distillation rate, I, 412.
- Manometry** in biochemical reactions, effect of diffusion in, III, 76.
- Maphasen**, arsenic in tissues and urine after injection of, III, 168.  
toxicity of, III, 926.  
treatment with, of syphilis, III, 551.  
trypanocidal action of, III, 926.
- Maple wood**, ethanolysis of, II, 158.  
syringyl and vanilloyl methyl ketones from, II, 42.
- Marble bones**. See Albers-Schönberg disease.
- Mares**, oestrus, ovulation, etc., in, III, 129.
- Marfan's syndrome**, III, 679.
- Marigold**, African. See *Tagetes erecta*.
- Marihuana**, psychosis after use of, III, 552.  
toxicity of, to goldfish, III, 502.
- Marine products**, II, 411.
- Markovnikov, V. V.**, I, 188.
- Marmota monax***, cerebral cortex in, III, 739.
- Marten**. See *Martes americana*.
- Martes americana***, delayed implantation in, III, 790.
- Martite**, occurrence of, in micaceous hæmatite, in Virginia, I, 220.
- Mask**, for oxygen inhalation, III, 101.
- Mass**, definition of, I, 200.
- Mass action**, law of, demonstration of, I, 215.
- Mastitis**, cystic, treatment of, with progesterone, III, 135.  
pregnandiol and oestrogen in urine in, III, 135.  
relation of, to ascorbic acid level of milk, III, 329.
- Mastitis**, treatment of, with colloidal silver oxide, in cows, III, 546.  
with gramicidin and novoxil, in cows, III, 546.  
with X-rays during lactation, III, 486.
- Mastocytoma**, multiple and solitary, spontaneous, in dogs, III, 698.
- Mastoid**, radiology of, in children, III, 185.  
wound closure after, sulphathiazole for, III, 839.
- Mastoiditis**, acute, treatment of, local, with sulphonamides, III, 480.  
chemotherapy of, III, 544.
- Matches**, dermatitis on ears from scratching, III, 357.
- Matricaria inodora***, unsaturated ester from, II, 186.
- Matter**, living, physico-chemical laws applied to, III, 57.
- Mayer, Julius Robert**, biography of, I, 343.
- Mayow John**, I, 188.
- Mean free path**, Tait's, functions related to, I, 290.
- Measles**, antibodies of, associated with serum-proteins, III, 856.  
modification and prevention of, by dosage with umbilical cord serum-globulin, III, 352.  
plasma-amino-acid level in, III, 665.  
prophylaxis against, with immune globulin, III, 844, 856.
- Meat**, anti-scorbutic properties of, III, 473.  
digestion of, by papain, III, 269.  
extractives of, effect of, on blood-non-protein-nitrogen, III, 370.  
mineral and vitamin content of, III, 907.  
pyridoxine distribution in, III, 471.  
vitamins in, III, 564.
- Meat products**, pyridoxine distribution in, III, 471.
- Mechanics**, statistical, I, 174.  
of binary mixtures, I, 205, 293.  
of nearest neighbour systems, I, 318.  
wave. See Wave mechanics.
- Mechanogram**, relation between electromyogram and, in muscle contractions, III, 298.
- Mecholyl**, III, 548.  
effect of, on neuromuscular atrophy and regeneration, III, 548.
- Medicine**, carcinogenic substances and, III, 149.  
chemistry and, III, 184.  
in aviation, use of tilt-table test in, III, 876.  
internal, physical therapy in, III, 695.  
laboratory, III, 462.
- Medulla oblongata**, syphilitic gumma of, cochlea degeneration in, III, 226.
- Medusa**, gastric juice of, III, 607.
- Megacolon**, congenital. See Hirschsprung's disease.  
due to incomplete atresia recti, III, 896.
- Megalocornea**, III, 678.
- Megaptera nodosa***, ovary structure of, III, 6.
- Megathura crenulata***, sperm agglutination in, III, 188.
- Melena**. See Melena.
- Melamine**, condensation products of, with formaldehyde, II, 206.  
crystal structure of, I, 87.
- Melancholia**, involutional, treatment of, androgens in, III, 884.  
with oestrogen and androgen, III, 216.  
with oestrone, III, 216.
- Melandrium**, sex-determination in, III, 676.
- Melanin**, formation of, effect of split products of carcinogenic azo-dyes on, III, 902.  
inhibition of, by glutathione, effect of oestrone on, III, 130.
- Melanogenesis**, pituitary rôle in, III, 810.
- Melanoma**, congenital, III, 324.  
genetics of, in fishes, III, 249.  
metastatic, with lymphatic leukaemia blood picture, III, 196.  
of choroid and ciliary body, III, 885.
- Melanophores**, differentiation of, effect of adrenal and sex hormones on, in chicks, III, 727.  
distribution and number of, studied by hybridisation and transplantation, rôle of ectoderm in, III, 727.  
origin of, III, 727.

- Melanophores**, response co-ordination of, in vertebrates, III, 365.  
 skin, effect of adrenaline injections on, III, 745.  
 vertebrate, responses of, co-ordination of, III, 743.
- Melanoplus differentialis**, eggs, distribution and origin of protyrosinase in development of, III, 791.  
 nitrogen distribution in, III, 507.
- Melanosis**, of internal ear, III, 520.
- Melanuria**, III, 532.
- Melena**, blood-urea-nitrogen after, prognosis by, III, 608.  
 due to sulphonamide treatment, III, 260.
- Melibiose**, activity of, III, 342.
- Melilotus alba**. See *Clover*, sweet.
- Mellita quinquesperforata**, clotting reactions in, III, 574.
- Melting point**, effect of pressure on, I, 88.  
 influence of isotopes on sharpness of, I, 139.  
 measurement of, baths for, I, 281.  
 of impure organic compounds, II, 341.  
 of elements, I, 356.
- Membranes**, animal, artificial and natural, culturing tissue on, III, 868.  
 beidellite, I, 396.  
 chorio-allantoic, growth on, of pleuropneumonia-like organisms, III, 941.  
 virus-infected, permanent mounts of, III, 720.  
 collodion, filtration of electrolyte solutions through, I, 96.  
 structure and electrical properties of, I, 171.  
 ultrafiltrates through, I, 142.  
 cupric ferrocyanide, and parchment, ionic permeability of, I, 236.  
 mineral, electrochemical properties of, I, 172, 204, 396.  
 mucous, vasoconstriction of, substances producing, III, 631.  
 nictitating, effect on, of cervical sympathetic stimulation after adrenalectomy in cats, III, 586.  
 sensitivity of, effect of thyroxine on, in cats, III, 593.  
 osmotic pressure and action of, I, 142.  
 permeability of, I, 236, 325.  
 and urine secretion, III, 246.  
 semi-permeable, equilibrium at, equation for, III, 416.  
 synovial, abnormalities in, due to infection and edema, III, 146.
- Menadiol**, toxicity of, and its esters, III, 844.
- Menadione**, dermatitis due to, III, 637.  
 effect of, on prothrombin level in infants, III, 9.  
 reactions of, with blood and plasma, III, 798.  
 toxicity of, III, 844.  
 See also 2-Methyl-1:4-naphthaquinone and Vitamin-K.
- Ménière's disease**, treatment of, with histamine, III, 683.
- Meningitis**, after head injuries, III, 740.  
 bacillus, Pfeiffer's, treatment of, with sulphapyridine, III, 335.  
 with sulphonamides, III, 335.  
*B. coli*, treatment of, with sulphapyridine in newborn, III, 705.  
 with sulphonamides, III, 705.  
 cerebrospinal, Rocky Mountain, complement fixation in, III, 353.  
 treatment of, with sulphonamides, in Sudan, III, 161.  
 influenza, treatment of, with sulphadiazine, III, 705.  
 with sulphapyridine, III, 161, 544.  
 meningococcal, chemotherapy of, III, 335.  
 treatment of, with sulphonamides in Ottawa, III, 410.  
 meningococcal and pneumococcal, treatment of, with sulphonamides, III, 705.  
 pneumococcal, otitic, treatment of, with serum and sulphonamides, III, 544.  
 treatment of, with serum and sulphonamides, III, 838.  
 with sulphanilamide, III, 65.
- Meningitis**, pneumococcal, treatment of, with sulphapyridine, III, 65, 335, 839.  
 with sulphathiazole, III, 410.  
 with sulphonamides, III, 410, 544, 918.  
 type V, with cavernous sinus thrombosis, treatment of, with sulphapyridine, III, 160.  
 pyogenic, treatment of, with sulphonamides, III, 544.  
 staphylococcal, treatment of, III, 838.  
 with asparagine bacteriophage, III, 348.  
*Staphylococcus aureus*, and septicæmia, treatment of, with sulphonamides, III, 47.  
 treatment of, with sulphapyrimidine, III, 920.  
 streptococcal, non-hæmolytic treatment of, with sulphanilamide, III, 335.  
 treatment of, III, 628.  
 with drugs, III, 544.
- Meningococcemia**, recovery from, after anaphylactic shock, III, 941.
- Meningococci**, action on, of germicides, III, 629.  
 infection by, III, 335.  
 treatment of, with sulphonamides, III, 839.  
 isolation of medium for, III, 493.  
 metabolic requirements of, and gonococci, III, 940.  
 new group of, III, 647.
- Meningo-encephalomyelitis**, post-vaccinal, III, 353.
- Meningopneumonitis**, treatment of, with sulphonamides, in mice, III, 707.  
 virus of, and of lymphogranuloma venereum and psittacosis, III, 561.  
 antigenic relationship of, to lymphogranuloma venereum virus, III, 650.
- Menometrorrhagia**, endocrine therapy of, and ovarian sterility, III, 603.  
 functional, treatment of, with endocrines, III, 386.  
 treatment of, with testosterone propionate, III, 605.  
 urinary excretion of 17-ketosteroids in, III, 603.
- Menopause**, arthralgia in, treatment of, with stilbæstrol, III, 524.  
 capillary blood flow in, effect of pituitary gonadotropin on, III, 310.  
 effect on, of oestrone suspensions, III, 601.  
 hemorrhage in, treatment of, with radium, uterine cancer after, III, 152.  
 induced, III, 314.  
 mental symptoms in, treatment of, with stilbæstrol, III, 524.  
 normal, III, 314.  
 stilbæstrol use in, III, 28.  
 symptoms of, control of, with oestradiol benzoate, III, 689.  
 physical and psychological, III, 235.  
 treatment of, with stilbæstrol and vitamins, III, 524.  
 treatment of, with oestradiol benzoate, III, 601.  
 with oestradiol benzoate and dipropionate, III, 525.  
 with oestrogen implantation, III, 688.  
 with stilbæstrol, III, 388, 524.  
 See also Menstrual cycle and Menstruation.
- Menstrual cycle**, human, normal, effect of progesterone on, III, 315.  
 red corpuscle sedimentation rate in, III, 287.
- Menstruation**, disturbances in, ætiology of, III, 453.  
 endocrine treatment of, physiology of, III, 388.  
 treatment of, with thyroid globulin, III, 684.  
 distress previous to, treatment of, with ammonium chloride, III, 234.  
 experimental, ovarian hormone interaction in, III, 454.  
 in intraocular endometrial transplants in monkeys, III, 138.  
 induction of, by operative ischæmia in monkeys, III, 140.  
 mechanism of, III, 892.  
 onset of, in relation to sterility, III, 28.  
 ovarian function and, III, 388.  
 See also Menopause and Menstrual cycle.
- Mental deficiency**, congenital, studies on, III, 19.  
 in twins, psychiatric-genealogical studies on, III, 19.  
 uncomplicated, genetic uniformity in, III, 303.  
 with congenital physical anomaly syndrome, III, 884.
- Mental depression**, treatment of, by electric shock, III, 884.
- Mental development**, relation between physical development and, III, 217.
- Mental diseases**. See under Diseases.
- Mental efficiency**, changes in, in deficiency of B vitamins, III, 448.  
 effect of low and high oxygen tensions on, III, 101.
- p*- $\Delta^{1:4(9)}$ -Menthadien-3-one. See Piperitenone.
- p*- $\Delta^{1:8(9)}$ -Menthadien-3-one. See *iso*Piperitenone.
- p*-Menthane-2:3-diol diphenylurethane, II, 324.
- trans*-Menthane-3:4-diol, II, 416.
- trans*- $\Delta^2$ -Menthene, oxidation of, II, 324.
- dl*-Menthene 3:4-oxide, II, 416.
- dl*- $\Delta^2$ -Menthene-2-ol, II, 416.
- p*-Menthenyl methyl peroxide, II, 416.
- 2-dl*- $\Delta^2$ -*p*-Menthenyl hydrogen peroxide, II, 416.
- Menthol**, bacterial lysis by, III, 939.
- neo*Menthol, reaction of, with phosphorus pentachloride, II, 286.
- $\beta$ -1-Menthylaminoethyl alcohol, and its picrate, II, 394.
- Mercer**, John, I, 188.
- Mercurials**, ichthyometry of, III, 53.  
 organic, effect of, on ringworm fungi, III, 481.  
 toxicity of, III, 551.
- Mercuri-3:4-diethylthiophen**, 2-chloro-, II, 62.
- Mercuri-3'-hydroxybenzylidenesulphanilamide**, 2'-hydroxy-, acetyl derivative, II, 222.
- Mercuri-5-methyl-2:2'-dithienyl**, 5'-chloro-, II, 61.
- Mercuri-1-methyl-2-trithienyl**, 8-chloro-, II, 62.
- Mercuri-3:4:3':4'-tetraethyl-2:2'-dithienyl**, II, 62.
- Mercurithiophen**, tetrachloro-, II, 62.
- Mercuri-2-trithienyl**, 1-*mono*-, and 1:8-*di*-chloro-, II, 61.
- Mercury atoms**, excited, photo-sensitisation by, I, 372.  
 green fluorescence of, in near ultra-violet-light, I, 195.  
 isotopes of, radioactive, I, 128.  
 pure, I, 405.  
 quenching of resonance rays from, by inert gases, I, 126.  
 resonance level of, at negative energy, I, 79.  
 solubility in, of aluminium, I, 235.  
 spectrum of, I, 309.  
 and its alloys with cadmium, I, 1.  
 discharge, I, 1.  
 electrodeless discharge, I, 349.  
 transmutation of, by fast neutrons, I, 35.  
 vapour, afterglow in, I, 80.  
 alkali-ion scattering in, I, 126.  
 "clean-up" of, in discharges through hydrogen, helium, and nitrogen, I, 213.  
 mean free path of gases in, I, 354.  
 polarisation of light diffused by, I, 228.  
 potassium-ion scattering in, I, 350.  
 sparking of oxide-coated cathodes in, I, 127.  
 vapour density of, I, 357.
- Mercury alloys**, reaction of, with oxygen and hydrogen peroxide, I, 305.  
 reactivity of, I, 105.  
 with europium and ytterbium, I, 110.  
 with lead, solution of, periodic, in acids, I, 370.  
 with magnesium, crystal structure of, I, 290.  
 with rare-earth metals, I, 335, 373.
- Mercury compounds**, ammoniated, absorption of, externally applied, III, 413.  
 poisoning with. See under Poisoning.  
 urinary, III, 395.
- Mercury salts**, current-voltage curves of, at dropping mercury cathode, I, 65.
- Mercury chlorobromide**, structure of, X-ray, I, 355.  
 sulphide, treatment with, of pruritus ani, III, 926.
- Mercuric ions**, base exchange of, adsorbed on wool, I, 246.

**Mercury :—**

**Mercuric salts**, co-ordinated, with diamines, I, 180.

**Mercuric chloride**, acquired kidney resistance to, III, 168.

arteritis produced by, III, 442.

complex formation between solutions of, with potassium iodide, I, 266.

electrical conductivity and viscosity of solutions of, I, 64.

gaseous, binding energy of, I, 164.

poisoning with. See under Poisoning.

reaction of, with ammonium oxalate, catalysed by ferric salts, I, 177.

reduction of, by hydroxylamine, I, 105.

spectrum of, I, 227.

sulphide, activation of, I, 273.

black, transformation of, into red, I, 209.

**Mercurous iodide**, spectrum of, ultra-violet band, I, 163.

**Mercury organic compounds**, II, 240, 291.

**Mercury bis-5-bromo-3-pyridyl**, II, 240.

dialkyls, reaction of, with mercury salts of tribasic acids, II, 291.

diallyl, II, 41.

di-3-iodo-4-methoxyphenyl, II, 41.

ethyl phosphate, II, 386.

halides, organic, electric moments of, in dioxan, I, 293.

methyl iron tetracarbonyl, I, 405.

phenyl borate. See Merfen.

**Mercuric alkyl chlorides**, as skin disinfectants, III, 547.

allyl halides, II, 41.

*p*-aminobenzenesulphonamide, II, 400.

3-pyridyl bromide and iodide, II, 240.

**Mercury detection and determination :—**

detection of, I, 333.

with  $\alpha$ -naphthylamine, I, 340.

with photographic emulsions, I, 248.

determination of, III, 864.

as co-ordinated salts with diamines, I, 180.

in organic compounds, II, 159.

microchemically, I, 278.

photometrically, I, 154.

volumetrically, I, 410.

mercuric, detection of, with phloroglucinol, I, 278.

vapour, determination of, by absorption spectrum, in air, I, 114.

**Mercury ores**, of Lake County, California, I, 284.

**Merfen**, treatment with, of skin diseases, III, 547.

**Merthiolate tincture**, dermatitis due to, III, 357.

**Merwinite**, artificial and natural, I, 379.

**Mesenchyme**, action on, of cytotoxic serum, III, 192.

active, function of, in scleroma, III, 395.

monocytosis as sign of, III, 395.

**Mesentery**, enteric, fusion of fasciæ of, in adults, III, 657.

**Mesit-*p*-aniside**, II, 258.

**Mesitbenzylamide**, II, 258.

**Mesit-*o*-tert-butylanilide**, II, 258.

**Mesitethylamide**, II, 258.

**Mesitmorpholide**, II, 258.

**Mesit- $\beta$ -naphthalide**, II, 258.

**Mesitoic acid**, benzyl ester, II, 312.

*p*-tolyl ester, II, 311.

**Mesitoic anhydride**. See 2:4:6-Trimethylbenzoic anhydride.

**2-Mesitoyl-5:4'-dimethyldiphenyl**, II, 315.

**2-Mesitoyl-5:4'-dimethyldiphenyl ketone**, II, 312.

**O-Mesitoylmandelic acid**, II, 229.

**3-Mesitoyl-5-mesityl-2-methylfuran**, II, 144.

**2-Mesitoyl-3-phenyl-2:3-dihydrobenzofuran**, II, 108.

**3-Mesitoyl-4-phenyl-5-mesityl-2-methylfuran**, II, 145.

reaction of, with magnesium methyl iodide, II, 145.

**$\gamma$ -Mesitoyl- $\beta$ -phenyl- $\alpha$ -mesityl- $\Delta^8$ -*n*-pentene- $\alpha$ -dione**, II, 149.

**Mesit-*p*-phenetide**, II, 258.

**Mesit- $\alpha$ -phenylethylamide**, II, 258.

**Mesitpiperide**, II, 258.

**Mesitisopropylamide**, II, 258.

**Mesit-*p*-toluide**, II, 258.

**Mesityl oxide**, action on, of chlorine, II, 188.

oxonium complex constant for, I, 366.

**Mesitylacetodurenes**, II, 92.

**$\alpha$ -Mesitylacetonitrile**,  $\alpha$ -hydroxy-, II, 407.

**Mesitylacetate-2:4:6-triethylbenzene**, II, 92.

**Mesityl 2-benzofuryl ketone**, II, 108.

**5-Mesityl-2:2-dimethyl-1:3-dioxol-4-one**, II, 421.

**Mesitylduryl-4<sup>o</sup>-propen- $\alpha$ -ols**, and their derivatives, II, 92.

**Mesityl  $\alpha$ -durylvinyl ketones**, II, 92.

**Mesityl 2-1'-naphthyl-1-naphthyl ketone**, II, 312.

**$\alpha$ -Mesitylpropionemesitylene**, II, 92.

**$\alpha$ -Mesitylpropionic acid**, II, 92.

**$\alpha$ -Mesitylpropionylidurenes**, II, 92.

**Mesobiliapurpurin**, constitution of, and its derivatives, II, 117.

**Mesochlorin-7**, dimethyl ester, II, 274.

**Mesochlorin- $\alpha$** , dimethyl ester, derivatives of, II, 383.

**Mesocholelin**, constitution of, and its derivatives, II, 117.

**Mesodeoxypyroisophæophorbide- $\alpha$** , methyl ester, II, 382.

**Mesomethylphæophorbide- $\alpha$** , chlorohydroxy-, II, 181.

**Mesons**. See Mesotrons.

**Mesonephroma**, ovarian. See under Ovaries.

**Mesophæophorbide- $\alpha$** , 10-hydroxy-, II, 274.

**Mesophyllochlorin**, methyl ester, II, 382.

**Mesoporphyrin**, hydroxy-, and its dimethyl ester, II, 290.

benzoyl derivative, dimethyl ester, and its zinc salt, II, 289.

nitro-, dimethyl ester, II, 152.

**Mesopropurpurin-7**, II, 274.

**Mesopurpurin-7**, chlorohydroxy-, and nitro-, trimethyl esters, II, 181, 182.

**Mesopurpurin-18**, derivatives of, II, 181.

methyl ester, benzoate, II, 383.

**Mesopyrophæophorbide- $\alpha$** , methyl ester, II, 383.

**Mesopyrrochlorin**, methyl ester, II, 383.

**Mesorbodochlorin**, dimethyl ester, II, 382.

methyl ester, 6-carboxylpiperide, II, 383.

**Mesotrons**, cloud-chamber track of, I, 256.

disintegration of, spontaneous, I, 191.

latitude effect and decay of, I, 37.

life of, I, 312.

and radioactive  $\beta$ -decay, I, 37.

at different elevations, I, 129.

mass of, I, 129, 192, 287.

production and absorption of, I, 256.

scattering of, I, 383.

anomalous and electrical, I, 162.

effect of radiation damping on, I, 313.

showers of, I, 36.

penetrating, I, 129.

slow, radioactive decay of, I, 383, 384.

spectrum of, I, 36.

spin of, I, 36.

study of, with dual telescope, I, 256.

theory of, I, 5, 130.

electromagnetic properties of nuclei in, I, 384.

in relation to magnetic moments, I, 384.

theory of atomic nuclei based on, I, 130.

variation of, with upper air temperature, I, 37.

**Mesquite wood**, dermatitis from, III, 356.

**Messier 33**, spectrum of, I, 310.

**Metabolism**, after casein hydrolysate parenterally administered, III, 542.

amino-acid, III, 766.

anaërobic, of turtle's auricle and eel's heart, III, 331.

ascorbic acid, adult scurvy and, III, 472.

effect of toxic substances on, III, 701.

in pregnant and puerperal Japanese, III, 329.

basal, effect of adrenal preparations on, III, 119.

in college women, III, 834.

in old age, III, 408.

in relation to nitrogen metabolism, effect of nutrition and temperature on, III, 835.

of normal infants, III, 330.

rate of, in chronic illness, III, 541.

tachycardia and heat sensitivity as indications for, in thyrotoxicosis, III, 450.

**Metabolism**, basal and total, signs and symptoms at various levels of, III, 256.

bile acid, III, 755, 940.

body size and, III, 703.

butter-yellow, in rats, III, 766.

calcium, effect of activated sterols on, III, 763.

calcium and phosphorus, effect on, of low-calcium diet and calciferol, III, 330.

of thyroid and parathyroid hormones, III, 595.

carbohydrate, III, 475.

anterior pituitary in, in eviscerated rats, III, 747.

disturbed, in rats on fat-deficient diet, III, 542.

effect on, of adrenalectomy, III, 307.

of diethylstilbæstrol, III, 750.

of infection, III, 542.

of staphylococcus infection in rabbits, III, 542.

of toxins, in rabbits, III, 836.

endocrinological disorders of, glucose-, insulin-, and glucose-insulin-tolerance tests in diagnosis of, III, 624.

hypophysis-diencephalon system and, III, 310.

in aneurin deficiency, III, 405.

in old age, III, 408.

intracellular, in muscle and liver, III, 44.

phosphoric acid in, III, 836.

carbohydrate and fat, III, 542.

carbohydrate and phosphorus, in muscles of overheated animals, III, 444.

carbohydrate and potassium, effect of adrenal cortex extracts on, III, 521.

carbohydrate and protein, effect on, of adrenal cortical hormones, III, 808.

of pituitary, III, 747.

chemical investigation of, III, 42.

cholesterol, III, 766.

choline, III, 468.

creatinine-creatinine, in older patients with prostatic enlargement, III, 690.

diabetes and, III, 44.

diamine, pigment formation and, III, 916.

1:2:5:6-dibenzanthracene, III, 613.

diseases of, III, 541.

effect of quinine on, in fasting dogs and creatinuria patients, III, 376.

enzyme, during avitaminosis-*B*<sub>1</sub> in rats, III, 154.

ethyl alcohol, pyruvate rôle in, III, 915.

fat, in diabetes, III, 624.

vitamin-*B* complex and, III, 829.

fat and glucose, relation of phosphorus to, in sprue, III, 157.

frame for, III, 330.

fructose, in eviscerated rat, III, 766.

galactose, galactose-1-phosphoric acid in, III, 257.

gaseous, in hens, effect of temperature on, III, 834.

glutamine, III, 256.

glutathione, III, 766.

histidine, III, 766.

in pregnancy, III, 313.

l(-)-histidine, III, 766.

human, volatile alkylamines in, III, 156.

$\alpha$ -hydroxy- $\gamma$ -benzylthiolbutyric acid, III, 46.

*dl*- $\alpha$ -hydroxy- $\gamma$ -benzylthiolbutyric acid and *l*- and *dl*- $\alpha$ -hydroxy- $\beta$ -benzylthiolpropionic acids, in rats, II, 3.

$\alpha$ -hydroxy- $\beta$ -benzylthiolpropionic acid, III, 46.

in plant cells, III, 499.

iodine, extrathyroidal, III, 306.

of thyroid, III, 520.

radioactive iodine as indicator of, III, 593.

relation of thyroid and pituitary to, III, 309.

iron, clinical studies on, III, 191.

in man, on daily intake of less than five milligrams, III, 476.

$\alpha$ -ketoglutarate, effect of aneurin on, III, 470.

kinetic theory of diffusion forces in, I, 262.

lactic acid, containing radioactive carbon in  $\alpha$ - or  $\beta$ -position, III, 409.

lead, effect of calcium and phosphorus on, III, 468.

lipin, in pancreatic diabetes, III, 474.

**Metabolism**, lipin, in relation to nutritional alterations, III, 326.  
mannitol, III, 44.  
methionine, and its derivatives, with tissue slices, III, 42.  
mineral, during A.T. 10 treatment of tetany, III, 118.  
in old age, III, 409.  
of man on white and brown bread, III, 619.  
of sheep, III, 827.  
 $\beta$ -naphthylamine, by rats, rabbits, and monkeys, III, 334.  
nicotinic acid, III, 409.  
nitrogen, effect on, of salicylate in dogs, III, 337.  
endogenous, in relation to basal metabolism, III, 835.  
influence of protein feeding on, in rats, III, 835.  
 $\alpha$ -oestradiol and progesterone, III, 233.  
oestrogen and progestin, in pregnancy, III, 388.  
of adolescence, III, 256.  
pathology and physiology of, vitamins in, III, 907.  
pectin, ingested, III, 157.  
phenylalanine, III, 765.  
phosphate, sugar absorption and, III, 895.  
phosphate, salt, and water, creatine and creatinine in relation to, III, 331.  
phosphatide, in cerebrospinal fluid, III, 18.  
phosphorus, effect of activated sterols on, III, 763.  
of tissue fractions after radio-phosphorus dosage in mice, III, 158.  
post-shock response in, III, 914.  
protein, effect of anterior pituitary on, III, 123.  
respiratory. See Respiratory metabolism.  
riboflavin, in cockroach, study of, III, 830.  
sorbitol, III, 44.  
steroid, III, 525, 624.  
steroid hormone, III, 474.  
studies in, using isotopes, III, 259.  
sulphur, III, 623.  
sulphur-containing amino-acid in, III, 915.  
uric acid, effect of renin on, in pregnant and non-pregnant dog, III, 99.  
vanillin, in rabbits, II, 143; III, 334.  
vanillin, in rabbits, II, 143; III, 334.  
vitamin-A, of college students, III, 829.  
vitamin-A and carotene, in diabetics and normals, III, 252.  
vitamin-B<sub>6</sub>, III, 407.  
vitamin-C. See Metabolism, ascorbic acid.  
water, in pregnancy, III, 334.  
**Metabolites**, carcinogenic, analysis of, spectrographically, III, 822.  
**Metahormones**. See Oestrogens, urinary, specific.  
**Metakentrin**, effect of, III, 748.  
**Metals**, activation of, by foreign addenda, I, 333.  
adsorption by, of hydrogen, I, 94.  
analysis of, spectrally, tempering effect in, I, 156.  
anisotropy of electronic work function of, I, 87.  
cold working of, internal friction introduced by, I, 45.  
compressibility and electron volume of, I, 256.  
conductivity electrons in, I, 30.  
contact potential difference of, with solutions through thin metal films, I, 368.  
copper and tellurium group, detection of, I, 184.  
crystals of, plastic properties of, I, 137.  
single points of, autoelectronic emission from, I, 355.  
crystal structure of, I, 86, 320.  
detection of, organic reagents for, I, 248.  
determination of, spectrographically, I, 181.  
with dithizone, I, 278.  
with hydroxybenzylidenetherodanines, I, 278.  
diffusion in, vacancy mechanism for, I, 262.  
effect of, on protoplasm synthesis, III, 635.  
elastic constants of, I, 198.  
electron emission of, in electric fields, I, 255.  
field emission from, effects of heat-treatment on, I, 127.

**Metals**, free electrons in, I, 45.  
friction of, I, 354.  
group III b, solid solutions of magnesium in, I, 263.  
group VIa, valency of, I, 371.  
heavy, colloidal, treatment with, of rheumatoid arthritis, III, 337.  
iron group, co-precipitation of, in analysis, I, 211.  
emissivities of, I, 392.  
thermionic properties of, I, 285.  
liquid, structure of, I, 135.  
magnetic increase of resistance and conductivity types in, I, 48.  
model of, showing plastic flow, I, 389.  
potential of, external, I, 167.  
precipitation of, and solution in electrolytes, polarisation in, I, 242.  
radiography of, I, 377.  
rare, physical chemistry of, I, 368.  
rare-earth. See under Earths, rare.  
reduction of salts by, in liquid ammonia solution, I, 153, 306.  
relaxation theory of, I, 52.  
spectra of, K-absorption, ionic, in aqueous solutions, I, 285.  
spark, I, 27.  
sputtered, action of ozone on, I, 209.  
thermal expansion of, I, 50, 167.  
trace, determination of, in biological material, III, 724.  
transition, electrical resistance of, I, 13.  
vacuum-tight sealing of mica to, I, 308.  
di- and tri-valent, double hydroxides between, I, 306.  
**Metal films**, reflectivity of, far ultra-violet, I, 228.  
thin, thickness of, I, 74.  
**Metal powders**, cathodic decomposition of, I, 303.  
**Metal surfaces**, exchange forces between neutral molecules and, I, 37.  
interaction between molecules and, I, 163.  
reproducible, contact angles against, I, 236, 396.  
sensitised, photo-effect at, I, 84.  
**Metalation**, alkyl carbonates as solvents in, II, 246.  
**Metallic amines**. See under Amines.  
carbonyls, I, 210, 247, 306, 337, 373.  
chlorides, solubility of, in aqueous hydrochloric acid, I, 359.  
trichlorides, heat of solution of, I, 330.  
enolates, reaction of, with quinones, II, 255, 267.  
halides, binary, I, 240.  
bivalent, thermodynamics of, in aqueous solution, I, 398.  
hydroxides, double, I, 274.  
sols, equilibria and ageing in, I, 237.  
nitrates, bivalent, activity coefficients of, I, 328.  
nitrosyls, nitrosocarbonyls, nitrosocyanides, and nitrosohalides, preparation of, I, 110.  
oxides, reaction of, with ferric oxide, rôle of water in, I, 336.  
phosphides, preparation of, by igneous electrolysis, I, 303.  
sulphates, of magnesium series, I, 328.  
**Metalloid thiohalides**, I, 210.  
**Metamorphosis**, III, 82.  
amphibian, effect of inanition on, III, 727.  
**Metaphen**, effect of, on connective tissue in vivo, III, 433.  
**Metatarsus**. See under Bone.  
**Meteorites**, age of solar system from, I, 216.  
luminescence of, I, 121.  
stone-iron, structure and mode of formation of, I, 283.  
Witsand, S.W. Africa, I, 121.  
**Methacrylic acid**, ethyl ester, plastic, in laboratory technique, III, 570.  
polymerisation of, I, 242, 402.  
in presence of benzoyl peroxide, I, 332.  
polymerides of, double refraction of flow of solutions of, I, 98.  
mol. wts. of, I, 364.  
velocity of sound in, I, 167.  
See also Perspex.

**2-Methacrylothiophen**, II, 236.  
**Methæmalbumin**, spectrophotometry of, III, 91.  
**Methæmoglobin**, oxidation-reduction potential of, mixed with ethyl hydrogen peroxide, III, 774.  
mixed with hæmoglobin, in urea solution, III, 736.  
reaction of, with salicylates, III, 774.  
reduction of, by ascorbic acid, III, 581.  
rate of, in dogs, III, 573.  
**Methane**, adsorption of, on glass plates, I, 170.  
carbon-hydrogen bond strengths in, I, 258.  
chlorination of, photochemical, I, 69.  
compressibility of mixtures of, with *n*-butane, I, 140.  
Compton line for, I, 134.  
decomposition of, in glow discharge, at liquid air temperatures, I, 303.  
diamagnetic susceptibility of, I, 85.  
equilibrium of, with isobutane, I, 367.  
with *n*-pentane and propane, I, 367.  
with propane, I, 368.  
formation of, catalysed by copper-thorium and nickel, I, 244.  
m.p.-pressure curve of, I, 89.  
oxidation-decomposition of, I, 145.  
polarisability and internuclear distance in, I, 351.  
sound absorption in, and its mixtures, I, 49.  
thermal polymerisation of, II, 125.  
**Methane**, chlorobromo-derivatives, spectra of, Raman, I, 352.  
chlorobromofluoro-, II, 389.  
chlorofluoro-derivatives of, I, 321.  
chlorotrifluoro-, spectrum of, Raman, I, 165.  
trichlorofluoro-, heat capacity, entropy, heats of fusion and vaporisation, and vapour pressure of, I, 138.  
halogeno-derivatives, heat capacity of, I, 321.  
statistical thermodynamics of, I, 261.  
spectra of, vibrational, I, 193.  
nitro-, equilibrium of, with isopropyl alcohol and water, I, 298.  
heat capacity of, I, 138, 292.  
structure of, I, 391.  
**Methane-1-selenonic acid**, potassium salts, II, 430.  
**Methanesulphonamides**, chloro-, II, 72.  
**Methanesulphonethanesulphonimide**, and its sodium salt, II, 297.  
**Methanesulphonic acid**, cellulose ester, and its derivatives, II, 83.  

-nitrophenyl and phenyl esters, II, 258.  
**Methanesulphonyl chloride**, chloro-, properties of, II, 72.  
trichloro-, preparation of, II, 73.  
**Methanesulphonylanthranilic acid**, II, 258.  
**2'-Methanesulphonylazobenzene- $\omega$ -methanesulphonic acid**, 4-amino-, sodium salt, II, 192.  
**Methanesulphonylglycylglycine**, II, 5.  
**Methanesulphonyl-*l*- and -*dl*-leucines**, II, 5.  
**Methanesulphonyl-2-methylazobenzenes**, 4-amino-, II, 192.  
**Methanesulphonyl-*dl*-phenylalanine**, II, 5.  

-methanesulphonyl- $\beta$ -phenylethyl alcohol, II, 11.  
**Methanesulphonylsarcosine**, II, 5.  
**Methanesulphonylsarcosylsarcosine**, II, 5.  
**N-Methanesulphonyl-*l*-tyrosine**, II, 5.  
**Methionine**, and its derivatives, II, 5, 47.  
antagonism of, to sulphonamide action on *Escherichia coli*, III, 477.  
anti-sulphonamide effect of, antagonism of urea to, III, 938.  
bacteriostatic action of, III, 334.  
content of, in bull spermatozoa, III, 239.  
detection of, colorimetrically, II, 160.  
determination of, II, 243.  
dietary, partial replacement of, by cystine for growth, III, 262.  
metabolism of. See under Metabolism.  
**dl-Methionine methylsulphonium chloride**, replacement with, of *dl*-methionine in diet, III, 252.  
replaceability of, and its  $\alpha$ -keto-acid analogue, in rat diet, III, 905.  
replacement of, with *dl*-methioninesulphonate and *dl*-methionine methylsulphonium chloride in diet, III, 252.

- Methoxides, formation of, in methylalcohol, I, 367.
- 3-Methoxy-4-acetylbenzofuran, and its semicarbazone, II, 112.
- 4-Methoxy-4'-acetyl- $\alpha$ -diethylstilbene, II, 58.
- 4-Methoxy-1-acetylnylcyclohexanol, and its derivatives, II, 171.
- 7-Methoxy-3-acetyl-8-methylcoumarin, II, 420.
- 4-Methoxy-4'-acetyl- $\alpha$ -methyl- $\beta$ -ethylstilbene, II, 58.
- 10-Methoxyacridone, 8-chloro-2-nitro-, II, 289.
- $\alpha$ -Methoxyacrylic acid, amide, methyl ester, and nitrile, II, 347.
- 4-Methoxy- $\omega$ -aminoaceto-1-naphthone, and its salts, II, 58.
- Methoxyaminoazobenzenes, II, 192.
- 2- $\epsilon$ -Methoxyamyl-3-methyl- $\Delta^2$ -cyclopentenone, and its semicarbazone, II, 363.
- 5-Methoxy-1-*p*-anisylidenecoumaran-2-one, II, 268.
- 6-Methoxy-3-anisyl-1:1-xantheneindene, II, 104.
- p*-Methoxybenzaldehyde, detection of, colorimetrically, II, 143.
- 4-Methoxybenzaldehyde, 2:3:6-trihydroxy-, II, 10.
- 2-Methoxybenzene-1-azo-1'-2'-5'-dimethylbenzene-4'-azo-1''-2''-benzoyloxynaphthalene-3'''-5'''-disulphonic acid, disodium salt, II, 196.
- 3-Methoxybenzofuran-4-carboxylic acid, and its chloride, II, 112.
- p*-Methoxybenzoic acid,  $\beta$ -*n*-butylaminoethyl ester, hydrochloride, II, 404.
- 4'-Methoxybenzophenone, 5-chloro-2-amino-, II, 273.
- 2-Methoxy-*p*-benzoquinone, 3:5-dibromo-6-hydroxy-, II, 10.
- 4-Methoxybenzoylbenzoic acid, 2'-hydroxy-, II, 198.
- 4-Methoxy-2-benzoyloxylacetophenone, 5-nitro-, II, 236.
- 5-Methoxy-1-benzoyl- $\beta$ -phenyl- $\alpha$ -*p*-anisyl- $\alpha$ -ethylcoumaran-2-one, II, 268.
- $\beta$ -4-Methoxybenzoylpropionic acid, 5-bromo- $\beta$ -2-hydroxy-, II, 198.
- 1-Methoxybenzthiazole, II, 238.
- 4-Methoxybenzthiazole, 2-amino-, 2-bromo-, 7-chloro-, 2:7-dichloro-, 7-chloro-2-amino-, and 7-chloro-2-bromo-, II, 290.
- 5-Methoxybenzthiazole, 4-nitro-, II, 153.
- 3-Methoxybenzyl alcohol, 3-bromo-, and its derivatives, II, 11.
- 7-Methoxy-3-benzyl-2:3-dihydro-1:4-benzopyrone, 3-amino-, acetyl derivative, II, 327.
- 7-Methoxy-3-benzyl-4-hydroxy-2:3-dihydro-1:4-benzopyrans, 3-amino-, acetyl derivatives, II, 327.
- 3-*p*-Methoxybenzyl-1:2:4-triazole, 5-hydroxy-, and its acetyl derivative and silver salt, II, 428.
- 5-Methoxy-1- $\omega$ -bromo-*p*-methoxybenzylcoumaran-2-one, 1-bromo-, II, 268.
- $\beta$ -Methoxyisobutane,  $\alpha$ -dichloro-, II, 72.
- $\gamma$ -Methoxybutan- $\beta$ -one, II, 248.
- 7-Methoxy-2-*n*-butyl-1:2:3:4-tetrahydrophenanthrene-2-carboxylic-1-acetic acid, 1-hydroxy-, dimethyl ester, II, 105.
- $\beta$ -Methoxy-*n*-butyric acid,  $\alpha$ -bromo-, synthesis of, II, 298.
- $\alpha$ -Methoxyisobutyrophenone 2:4-dinitrophenylhydrazones, II, 248.
- $\alpha$ - and  $\beta$ -7-Methoxy-2-carbomethoxy-2-*n*-butyl-1:2:3:4-tetrahydrophenanthrene-1-acetic acids, II, 105.
- $\beta$ -7-Methoxy-2-carbomethoxy-2-*n*-butyl-1:2:3:4-tetrahydro-1-phenanthrylpropionic acids, methyl esters, II, 105.
- $\beta$ -7-Methoxy-2-carbomethoxy-2-methyl-1:2:3:4-tetrahydro-1-phenanthrylpropionic acids, II, 105.
- $\alpha$ - and  $\beta$ -7-Methoxy-2-carbomethoxy-2-*n*-propyl-1:2:3:4-tetrahydro-1-phenanthrylpropionic acid, methyl esters, II, 105.
- $\gamma$ -7-Methoxy-2-carbomethoxy-1:2:3:4-tetrahydro-1-phenanthryl-*n*-butyric acids, methyl esters, II, 105.
- $\alpha$ - and  $\beta$ -7-Methoxy-2-carboxy-2-*n*-butyl-1:2:3:4-tetrahydrophenanthrene-1-acetic acids, and their dimethyl esters, II, 105.
- $\alpha$ - and  $\beta$ -7-Methoxy-2-carboxy-2-*n*-propyl-1:2:3:4-tetrahydrophenanthrene-1-acetic acids, and their dimethyl esters, II, 105.
- 2-Methoxychromindan,  $\mu$ -amino-, and its derivatives, II, 327.
- p*-Methoxycinnamic acids,  $\alpha$ -iodo-, II, 428.
- 5-Methoxycoumaranone, II, 284.
- 4-Methoxy-*m*-cresol, 6-nitro-, II, 374.
- 4-Methoxydeoxybenzoin, 3'-amino-, and 3'-nitro-, II, 18.
- 3'-hydroxy-, II, 9.
- 4'-Methoxydeoxybenzoin, 4-cyano-, and its 2:4-dinitrophenylhydrazones, II, 58.
- 4-Methoxydeoxybenzoin-3'-carboxylic acid, II, 18.
- 4-Methoxy- $\alpha$ -diethylstilbene-4'-carboxylic acid, II, 58.
- $\alpha$ - $\beta$ -4-Methoxydicyclohexylacetylene, 1:1'-dihydroxy-, and its isomerides, II, 171.
- 7-Methoxy-3:4-dihydrocoumarin-4-acetic acid, II, 420.
- 7-Methoxy-3:4-dihydrocoumarin-4-cyanoacetic acid, and its amide, II, 420.
- 6-Methoxy-3:4-dihydronaphthalene, II, 96.
- $\beta$ -Methoxy- $\alpha$ -dimesityl- $\Delta$ -butylene- $\alpha$ -dione,  $\gamma$ -bromo-, II, 316.
- 8-Methoxy- $\alpha$ -dimesityl- $\Delta$ -butylene- $\beta$ -one,  $\alpha$ -chloro-, II, 408.
- cis*- and *trans*-8-Methoxy- $\alpha$ -dimesityl- $\Delta$ -butylene- $\beta$ -ones,  $\alpha$ -hydroxy-, II, 408.
- $\alpha$ -Methoxy- $\alpha$ -dimesityl- $\Delta$ -propylene, II, 92.
- 5-Methoxy-1- $\omega$ -*p*-dimethoxybenzylcoumaran-2-one, 1-bromo-, II, 268.
- 3'-Methoxy-(5:3'-dimethoxy)-2-diphenyl ketone, II, 312.
- 2'-Methoxy-4-dimethylaminoazobenzene, II, 192.
- 2'-Methoxy-5:5'-dimethylazobenzene, 2-hydroxy-, sodium sulphate, II, 196.
- 4-Methoxy-2:6-dimethylbenzoic acid, II, 91.
- p*-tolyl ester, II, 95.
- 6-Methoxy-2:4-dimethylbenzoic acid, 3:5-dichloro-, II, 91.
- 3:4'-Methoxy-2':6'-dimethylbenzoyltoluene, 4-hydroxy-, II, 95.
- 4-Methoxy-5:6-dimethylisocoumaranone, 3-bromo-, II, 267.
- 5-Methoxy-4:7-dimethylcoumarin-3-acetic acid, II, 420.
- 7-Methoxy-2:3-dimethylindole, and its picrate, II, 377.
- 7-Methoxy-2:3-dimethyl-4-indolyl methyl ketone, and its derivatives, II, 377.
- 4'-Methoxydiphenyl ether, 3':5'-diiodo-4-amino-, and 4-nitro-, II, 282.
- $\alpha$ -Methoxydiphenylacetic acid,  $\beta$ -piperidinoethyl ester, hydrochloride, II, 237.
- 2-Methoxy- $\alpha$ - $\beta$ -diphenyl-4:6-dimethylcinnamic acid, and its derivatives, II, 360.
- 2-Methoxy-2:3-diphenyl-4-*p*-tolyl-6-methyl-1:2-benzopyran, II, 109.
- 2'-Methoxy-2-diphenyl ketone, II, 312.
- $\alpha$ -4'-Methoxy-4-diphenyl-*n*-propyl alcohol, II, 223.
- p*- $\beta$ -Methoxyethoxybenzaldehyde, II, 361.
- 4-Methoxy-2-ethoxybenzthiazole, 7-chloro-, II, 290.
- p*- $\beta$ -Methoxyethoxybenzylidene-*p*'-aminocinnamic acid, ethyl ester, and its benzyl derivatives, II, 361.
- p*- $\beta$ -Methoxyethoxybenzylidene-*p*'-phenetidine, II, 361.
- 4-Methoxy-3-ethoxy-2-methylbenzaldehyde, II, 429.
- 4-Methoxy-3-ethoxy-2-methylbenzoic acid, II, 429.
- 6-Methoxy-7-ethoxy-3-methyl-1:2:3:4-tetrahydronaphthalene-1:2-dicarboxylic acid, and its derivatives, II, 53.
- $\beta$ - $\beta$ -Methoxyethoxynitrobenzene, II, 361.
- Methoxy  $\gamma$ -ethoxypropyl ketone, II, 53.
- 3-Methoxy-2-ethoxytoluene, II, 429.
- 4'-Methoxy- $\alpha$ -ethyldeoxybenzoin, 4-cyano-, II, 58.
- 4- $\alpha$ -Methoxyethyldeuteroporphyrin, dimethyl ester, II, 382.
- 3-Methoxy-19-ethyl-17-equilenones, II, 105.
- 3-Methoxy-19-ethyl-17-equilenone-16-carboxylic acid, methyl esters, II, 105.
- 4-Methoxy-1-ethylcyclohexanol, and its 3:5-dinitrobenzoate, II, 171.
- 3-Methoxy-2-ethyl-1:4-naphthaquinone, trihydroxy-derivatives, II, 410.
- 5-Methoxy-*N*-ethyl-*m*-4-xylydine, II, 138.
- 4'-Methoxyflavylum chlorido, 7:8-dihydroxy-, II, 10.
- $\alpha$ -Methoxyhexane- $\beta$ -dione, II, 30.
- Methoxycyclohexenylacetylene, derivatives, II, 171.
- $\beta$ -4-Methoxycyclohexyl-2-*p*-anisylbutan- $\alpha$ -one. See  $\alpha$ -Ethylhexahydrodeoxyanisoin.
- 8-4-Methoxycyclohexyl- $\gamma$ -*p*-anisylhexan- $\gamma$ -ol, II, 362.
- 4-3'-Methoxy-4'-hydroxyphenylhydantoin, II, 271.
- $\epsilon$ -Methoxyimino- $\beta$ -diketohexane, and its copper salt, II, 394.
- Methoxyl groups, determination of, apparatus for, II, 211.
- 6-Methoxylepidine, 2-amino-, II, 288.
- N*-(6-Methoxylepidyl)sulphanilamide, and its *N*-acetyl derivative, II, 288.
- 3-Methoxymesitoic acid, and its amide, II, 91.
- 4-Methoxymesitylene, 2-bromo-, II, 91.
- p*-Methoxymethoxyaniline, II, 361.
- p*-Methoxymethoxybenzylidene-*p*'-aminocinnamic acid, ethyl ester, and its benzyl derivatives, II, 361.
- 4-*p*-Methoxymethoxybenzylideneamino-1-*p*-methoxybenzeneazobenzophthalene, II, 361.
- p*-Methoxymethoxybenzylidene-*p*'-methoxymethoxyaniline, II, 361.
- p*-Methoxymethoxybenzylidene-*p*'-methoxymethoxy-*p*'-phenetidine, II, 361.
- 5-Methoxy-1-*p*-methoxy- $\omega$ -2'-ketocyclohexylbenzylcoumaran-2-one, II, 268.
- 2'-Methoxy-2-methylazobenzene, 4-amino-, II, 192.
- 2'-Methoxy-5'-methylbenzophenone, 5-chloro-2-amino-, and its *N*-acetyl derivative, II, 273.
- $\gamma$ -Methoxymethyl-*n*-butyric acid, amide, II, 78.
- 7-Methoxy-8-methylcoumarin, II, 98.
- 7-Methoxy-8-methylcoumarin-3-carboxylic acid, and its ethyl ester, II, 98.
- L*'-Methoxy-*L*-methylglycollic dialdehyde, reaction of, with sodium hydroxide, II, 299.
- 2-Methoxy-4'-methylidiphenylsulphone, 3-chloro-, II, 49.
- 6-Methoxy-4'-methylidiphenylsulphone, 2-amino-, and 3-chloro-, II, 49.
- Methoxymethylenedioxystilbenes,  $\alpha$ -cyano-, II, 257.
- Methoxymethylethylmalonic acid, II, 77.
- 4-Methoxymethyl-6-ethylpyridine, 2-chloro-5-nitro-3-cyano-, and 2-hydroxy-3-cyano-, II, 30.
- 5-Methoxymethylfurfuraldehyde, formation of, from tetramethylglucose-1:2-ene, II, 217.
- $\beta$ -Methoxy- $\gamma$ -methyl- $\Delta^4$ -hexen- $\gamma$ -ol, II, 430.
- 3-Methoxy-5-methyl-5-phenanthro(4:5-*bcd*)-pyran, and its derivatives, II, 275.
- 2-Methoxy-4-methylquinoline, 8-amino-, and 8-nitro-, II, 150.
- 4-Methoxy-2-methylquinoline, 6-amino-, acetyl derivative, II, 330.
- 4-chloro-, and 4-hydroxy-, II, 150.
- 4-Methoxy-4'-methylstilbene,  $\alpha$ -cyano-, II, 257.
- 4-Methoxy-2-methyl- $\Delta^2$ -tetrahydrobenzaldehyde, and its semicarbazone, II, 406.
- 6-Methoxy-3-methyl-1:2:3:4-tetrahydronaphthalene-1:2-dicarboxylic acid, 7-hydroxy-, benzoyl derivative, ethyl ester, II, 53.
- 5-Methoxy-*N*-methyl-*m*-4-xylydine, II, 138.
- 1-Methoxynaphthalene, 2:4-dibromo-5-hydroxy-, 5-acetyl derivative, II, 255.
- 4-Methoxynaphthalene-2:3-dicarboxylic acid, 1-hydroxy-, diethyl ester, II, 259.
- 5-Methoxy-1:4-naphthaquinone, 2-*mono*-, and 2:6- and 2:8-*di*-bromo-, II, 255.
- 6-Methoxy-1-naphthamide, II, 96.
- 1-Methoxy-2-naphthoic acid, 4-hydroxy-, II, 259.
- 2-Methoxy-1-naphthoic acid, 6-bromo-, and its methyl ester, II, 14.
- 5-Methoxy-1-naphthol, bromination of, II, 255.
- 5-Methoxy-1-naphthol, 2-*mono*- and 2:8- and 6:8-*di*-bromo-, II, 255.
- $\beta$ -4-Methoxy-1-naphthylacrylic acid, and its dibromide, II, 261.

4-Methoxy-2-1'-naphthoxyloxyacetophenone, 5-nitro-, II, 236.  
 4-Methoxy- $\beta$ -1-naphthylacetethylamide,  $\beta$ -hydroxy-, II, 57.  
 $\beta$ -6-Methoxy-2-naphthyl- $\Delta^{\alpha\beta}$ -butenolide, II, 406.  
 6-Methoxy-2-naphthyl methoxymethyl ketone, II, 405.  
 $\beta$ -6-Methoxy-2-naphthyl- $\beta$ -methoxymethylpropionic acid,  $\beta$ -hydroxy-, ethyl ester, II, 406.  
 $\alpha$ -4-Methoxy-1-naphthyl-*n*-propyl alcohol, II, 223.  
 $\alpha$ -6-Methoxy-2-naphthyl-*n*-propyl alcohol, II, 223.  
 9-Methoxy-*s*-octahydrophenanthrene, II, 230.  
 4-(4'-Methoxyphenoxy)acetophenone, and its 2:4-dinitrophenylhydrazones, II, 261.  
 $p$ -4'-Methoxyphenoxybenzaldehyde, 3':5'-diiodo-, II, 282.  
 4-(4'-Methoxyphenoxy)benzoic acid, II, 260.  
 $p$ -4'-Methoxyphenoxybenzoxazole, 3':5'-diiodo-, II, 282.  
 4-(4'-Methoxyphenoxy)cinnamic acid, and its methyl ester, II, 261.  
 4'-Methoxyphenoxyacetic acid,  $\alpha$ -amino- $p$ -3':5'-diiodo-,  $\alpha$ -benzoyl derivative, II, 282.  
 4-(4'-Methoxyphenoxy)-3-methoxybenzoic acid, II, 261.  
 2-*m*-Methoxyphenoxy methylindan-1-one, 2-amino-, acetyl derivative, II, 327.  
 $\beta$ -*m*-Methoxyphenoxy- $\beta$ -phenylisobutyric acid,  $\alpha$ -amino-, and its derivatives, II, 327.  
 $\beta$ -4-(4'-Methoxyphenoxy)phenylpropionic acid, methyl ester, II, 261.  
 4'-Methoxy-4-phenoxypropionophenone, II, 223.  
 $p$ -Methoxyphenylacetaldehyde, benzylsemicarbazone, II, 427.  
 4-Methoxyphenylacetic acid, 3-amino-, 3-chloro-, and 3-nitro-, and their derivatives, II, 284.  
 4-Methoxyphenyl  $\alpha\beta$ -dibromo- $\beta$ -*p*-amylethyl ketone, 2-hydroxy-, acetyl derivative, II, 268.  
 7-Methoxy-4-phenyl-3:4-dihydrocoumarin, II, 420.  
 $p$ -Methoxy- $\beta$ -phenylethyl alcohol, II, 12.  
 $N$ -( $\beta$ -*p*-Methoxyphenylethylsulphanilamide, and its derivatives, II, 51.  
 6-Methoxy-3-phenyl-1-hydrindone, II, 329.  
 7-Methoxy-3-phenyl-5-methylcoumarin, II, 420.  
 $\beta$ -*p*-Methoxyphenylpimelic acid, and its esters, II, 57.  
 $\beta$ -Methoxy- $\beta$ -phenylpropaldehyde,  $\alpha$ -chloro-, II, 72.  
 $\beta$ -*p*-Methoxyphenylpropionamide,  $\alpha\alpha$ -dibromo-, II, 428.  
 2-Methoxyphenylthiocarbamide, 5-chloro-, II, 290.  
 2-Methoxyphenyltrimethylammonium salts, 4-nitro-, II, 221.  
 6-Methoxyphthalanil, 5-*mono*- and 3:5-*di*-bromo-, II, 255.  
 5-Methoxyisophthalic acid, dimethyl ester, II, 242.  
 6-Methoxyphthalic anhydride, 5-*mono*- and 3:5-*di*-bromo-, II, 255.  
 2-Methoxy-5-phenyl-*p*-benzoquinone, and its derivatives, II, 149.  
 4-Methoxypiperidinoaceto-1-naphthone, and its salts, II, 57.  
 4-Methoxy-4'-propenyldiphenyl, II, 223.  
 6-Methoxy-2-propenylnaphthalene, II, 223.  
 $\alpha$ -Methoxypropionic acid,  $\beta$ -bromo-,  $\alpha\beta$ -dibromo-, 3-chloro-, and  $\beta$ -hydroxy-, derivatives of, II, 347.  
 $\beta$ -Methoxypropionic acid,  $\alpha$ -bromo- and  $\alpha$ -chloro-, derivatives of, II, 347.  
 $\beta$ -Methoxypropioveratrate, II, 143.  
 $\beta$ -( $\beta$ -Methoxy-*n*-propoxy-*n*-propyl alcohol,  $\gamma$ : $\beta$ - $\gamma$ -dichloro-, II, 72.  
 $\beta$ -Methoxypropyl alcohol,  $\gamma$ -chloro-, II, 72.  
 3-Methoxy-19-*n*-propyl-17-equilenone-16-carboxylic acid, methyl esters, II, 105.  
 7-Methoxy-2-*n*-propyl-1:2:3:4-tetrahydrophenanthrene-2-carboxylic-1-acetic acid, 1-hydroxy-, dimethyl ester, II, 105.  
 6-Methoxyquinoline, 4-amino-, derivatives of, II, 378.  
 6- and 8-Methoxyquinolines, 4-amino-, II, 287.  
 6-Methoxyquinoline, carbinolamines from, II, 288.  
 6-Methoxyquinoline, 7-amino-, II, 237.

4-6'-Methoxy-6'-quinolylamino-6-methoxy-2-methylquinoline, II, 379.  
 8-Methoxy-5-quinolyl methyl ketone, and its derivatives, II, 377.  
 8-Methoxy-5-quinolyl phenyl ketone, II, 377.  
 $N$ -6-Methoxy-8-quinolylsuccinimide, II, 31.  
 6'-Methoxy-9-rubanol, and its picrate, II, 38.  
 3-Methoxy- $\Delta^{(14):2}$ -steradiene-*trans*-6:7-*trans*-11:12-tetracarboxylic acid, tetramethyl ester, II, 313.  
 4-Methoxystilbene, 4'-chloro- $\alpha$ -cyano-,  $\alpha$ -cyano-, and 3'-nitro- $\alpha$ -cyano-, II, 257.  
 Methoxystilbenediols, II, 91.  
 9-Methoxystyrylxanthylum perchlorate, II, 194.  
 4-Methoxy- $\Delta^3$ -tetrahydrobenzaldehyde, II, 262, and its derivatives, II, 406.  
 4-Methoxy- $\Delta^3$ -tetrahydrobenzyl alcohol, and its *p*-nitrobenzoate, II, 407.  
 6-Methoxy-1:2:3:4-tetrahydro-17-equilenones, II, 230.  
 6-Methoxy-1:2:3:4-tetrahydronaphthalene, 1-hydroxy-, and its  $\alpha$ -naphthylurethane, II, 96.  
 4-Methoxy-*m*-tolualdehyde, 2-hydroxy-, II, 98.  
 4-Methoxy-*m*-toluidine, 6-nitro-, II, 374.  
 $\beta$ -Methoxytoluylanisylpropionic acids, and their derivatives, II, 285.  
 $\beta$ -3-Methoxy-*p*-toluylpropionic acid, and its salts and derivatives, II, 257.  
 4-Methoxy-2:5-toluquinone, 3-hydroxy-. See Fumigatin.  
 $\gamma$ -3-Methoxy-*p*-tolylbutyric acid,  $\gamma$ -hydroxy-, II, 257.  
 $\gamma$ -3-Methoxy-*p*-tolylbutyrolactone, II, 257.  
 Methoxytolyl  $\alpha$ -methoxystyryl ketones, II, 285.  
 $\alpha$ -2-Methoxy-3:4:6-trimethylphenylbutan- $\gamma$ -one,  $\alpha$ -5-hydroxy-, acetyl derivative, II, 326.  
 $\lambda$ -Methoxyundecane- $\beta$ -dione, II, 300.  
 $\alpha$ -Methoxyvinyltrimethylammonium bromide, II, 4.  
 Methyl, preparation and reactions of, II, 293.  
 Methyl alcohol, b.p. of mixtures of dioxan and, I, 293.  
 density, refractive index, and viscosity of mixtures of dioxan and, I, 293.  
 equilibrium of, with ethyl alcohol, and water, I, 263.  
 with water vapour-air and water, I, 324.  
 heats of solution of monatomic ions in, I, 64.  
 poisoning by. See under Poisoning.  
 Methyl bromide, chemical changes of, in animal body, III, 415.  
 photolysis of, I, 179.  
*n*-butyl ether, thermal decomposition of, I, 102.  
*n*-butyl ether, chloro-, II, 361.  
 ether, thermal decomposition of, I, 300.  
 iodide, reaction of, with Schiff's bases, II, 380.  
 spectrum of, absorption, I, 257.  
 mercaptan. See Methylthiol.  
 $\gamma$ -methyl- $\alpha$ -ethylallyl ether, II, 127.  
 nitrate, structure of, I, 391.  
 nitrite, structure of, I, 391.  
 3-Methylaceneaphthene, and 3-hydroxy-, II, 407.  
 $N$ -Methylacetanilide, X-ray structure of, I, 230.  
 2-Methyl-2-acetonyl-4:5-benz-1:3-dioxole, II, 376.  
 2-Methylacetophenone, 4-bromo-, 2:4-dinitrophenylhydrazones, II, 56.  
 5-bromo-, oxime, II, 57.  
 3-Methylacetophenone, 4-bromo-, II, 56.  
 4-Methylacetophenone, 3-bromo-, derivatives of, II, 56.  
 $\alpha$ -Methylacrylic acid. See Methacrylic acid.  
 17-Methyltiocholanolic acid, 3( $\alpha$ )-hydroxy-, methyl ester, 3( $\beta$ )-hydroxy-, and its methyl ester, and their acetates, II, 231.  
 $\alpha$ -Methylallylamine, and its picrate, II, 3.  
 Methylallylaminopropionic acid, and its picrate, II, 249.  
 6- $\alpha$ -Methylallylphenol, 2:4-dichloro-, phenylurethane, II, 258.  
 2-Methyl- $d$ -altromethylose, II, 350.  
 $\alpha$ -Methyl- $D$ -altrose *tetraacetate*, II, 80.  
 Methylamidophosphoric acid, diphenyl ester, II, 281.  
 Methylamine, hydrochlorides, activity coefficients of, I, 298.  
 reaction of, with nitrous acid, II, 76.  
 Methylaminoazobenzenes, II, 192.

4-Methyl-5-*p*-aminobenzoyloxyethylthiazole, II, 363.  
 $d$ - $\beta$ -Methylamino- $\alpha$ -hydroxy- $\alpha$ -hydroxyphenylethane. See Synephrin.  
 $l$ - $\beta$ -Methylamino- $\alpha$ -hydroxy- $\alpha$ -hydroxyphenylethane hydrochloride. See Neosynephrin.  
 1-Methylamino-2-methylnaphthalene, II, 306.  
 1-Methylamino-2-methylnaphthalene, 4-chloro-, and its derivatives, II, 307.  
 2-Methyl-5-aminomethylisonicotinic acid, ethyl ester, and its picrate, III, 333.  
 $\beta$ -Methylamino- $\gamma$ -phenyl-*n*-butane, and its hydrochloride, II, 221.  
 2-Methylaminostilbene, 4-nitro-, II, 355.  
 Methylammonium decaborate, I, 335.  
 $\beta$ - $\alpha$ -Methylisomethylaminoethyl alcohol, and its picrate, II, 394.  
 5'-Methyl-7-*iso*amyl-3:4-cyclohexenocoumarin, and its acetate, II, 111.  
 $d$ -5'-Methyl-7-*n*-amyl-3:4-cyclohexenocoumarin,  $d$ -5-hydroxy-, and its acetate, II, 202.  
 4-Methyl-4-*n*-amylhydantoin, II, 271.  
 2-Methyl-2-*n*-amylloxazolidine, II, 394.  
 4-Methyl-5-*n*-amylpyrimidine, 2-amino-, 2-amino-6-hydroxy-, and 6-chloro-2-amino-, II, 151.  
 2-Methyl-8-*n*-amylpyrrole, II, 207.  
 2-Methyl-3-*n*-amylpyrrole-5-carboxylic acid, ethyl ester, II, 207.  
 Methyl-*n*-amylsulphone, II, 138.  
 4-Methyl-5-*iso*amylthiazole, 2-amino-, II, 208.  
 6-Methylandrostand-3:5-diol 3-acetate, II, 365.  
 1-*N*-Methylanilinobenzthiazole ethoperchlorate, II, 154.  
 1-8-Methylanilino- $\Delta^{\alpha\gamma}$ -butadienylbenzthiazole ethoperchlorate, and triiodide, II, 154.  
 2-8-*N*-Methylanilino- $\Delta^{\alpha\gamma}$ -butadienylquinoline methiodide, II, 156.  
 1- $\zeta$ -Methylanilino- $\Delta^{\alpha\gamma\epsilon}$ -hexatrienylbenzthiazole ethiodide, II, 155.  
 1- $\beta$ -Methylanilinovinylbenzthiazole ethiodide, II, 155.  
 9-Methylantracene-10-aldehyde, and its derivatives, II, 407.  
 $\gamma$ -9-Methyl-2-anthranyl-*n*-butyric acid, and its methyl ester, II, 8.  
 2-Methylantraquinone, 1:4:5:7-tetrahydroxy-. See Catenarin.  
 4-Methylantr-9-one, II, 228.  
 $\alpha$ - and  $\beta$ -Methylaspartic acids, and their methylation, II, 132.  
 Methylation, biological, III, 937.  
 2'-Methyl-1'-aza-3:4-benzpyrene, 4'-hydroxy-, II, 271.  
 5-Methylazulene, and its derivatives, II, 280.  
 $\alpha$ -Methylbenzaldehyde, dichloro-, II, 227.  
 4-Methylbenzeneazo- $\beta$ -naphthyl acetate, 2- and 3-nitro-, II, 139.  
 4-Methylbenzeneazo- $\beta$ -naphthylamine, 3-nitro-, II, 139.  
 $N$ -Methylbenzilanilide, II, 329.  
 2-Methylbenzimidazole, 5-hydroxy-, II, 117.  
 3-Methylbenzophenone, 2':4'-dinitrophenylhydrazones, II, 100.  
 2-Methylbenzisoxazole, II, 66.  
 1'-Methyl-3:4-benzpyrene, and its derivatives, II, 50.  
 2-Methyl-3:4-benzpyrene, II, 7, 8.  
 1-Methylbenzthiazole, 5-nitro-, ethiodide, II, 239.  
 thiol-, dipole moments of, I, 289.  
 4'-Methylbenzthioindigos, 6'-chloro-, II, 333.  
 7'-Methylbenzthioindigos, 5'-chloro-, II, 333.  
 7'-Methyl-6:7-benzthioindirubin, 5'-chloro-, II, 333.  
 $\alpha$ - $\alpha'$ -Methylbenzylbenzoic acid, II, 228.  
 $\alpha$ -Methyl- $\alpha'$ -bromomethylthylene oxide, II, 295.  
 4'-*O*-Methylbuten, II, 6.  
 4-Methyl-4- $\Delta^4$ -isobutenylhydantoin, II, 271.  
 4- $\alpha$ - $\beta$ -Methyl- $\Delta^4$ -butenyl-*m*-xylene, II, 168.  
 4- $\beta$ - $\gamma$ -Methyl- $\Delta^8$ -butenyl-*m*-xylene, II, 168.  
 4'-*O*-Methylbtrnin, II, 6.  
 $\beta$ -Methyl-*sec*-butylaminopropionic acid, ethyl ester, II, 278.  
 5-Methyl-2-butyl-5-*n*-amylcyclohexane-1:3-dione, II, 346.  
 3-Methyl-5-*tert*-butylbenzaldehyde, 2-hydroxy-, II, 314.  
 3-Methyl-5-*tert*-butylbenzyl alcohol, 2-hydroxy-, II, 374.



- 3-Methyl-5-*tert*.-butylbenzyl chloride, 2-hydroxy-, II, 310.
- 8-Methyl-6-*tert*.-butylchroman-2:3-dicarboxylic acids, II, 374.
- 4-Methyl-4-butylhydantoins, II, 271.
- Methylbutyl-3-methyl-4-*cyclopentenones*, II, 363.
- Methyl-*tert*.-butylneopentylcarbonyl ketones, II, 348.
- 1-Methyl-7-*sec*.-butylphenanthrene, II, 305.
- 3-Methyl-5-*tert*.-butyl- $\alpha$ -quinonemethide, II, 310.
- Methyl-*n*-butylsulphone, II, 138.
- 1-Methyl-7-*sec*.-butyl-1:2:3:4-tetrahydrophenanthrene, II, 305.
- p*- $\alpha$ -Methyl-*n*-butyltoluene, II, 84.
- 8-Methyl- $\alpha$ -isobutyl-*n*-valeric acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- 4- $\alpha$ - $\beta$ -Methyl-*n*-butyl-*m*-xylene, II, 168.
- 4- $\beta$ - $\gamma$ -Methylbutyl-*m*-xylene, II, 168.
- $\beta$ -*dl*- $\beta$ -Methylbutyramidopropionic acid,  $\alpha$ ' $\beta$ '-dihydroxy-, and its derivatives, II, 278.
- dl*- $\alpha$ -Methyl-*n*-butyric acid,  $\alpha$ :3:5-dinitroamino-,  $\alpha$ -benzoyl derivative, II, 258.
- $\beta$ -Methylbutyric acid,  $\alpha$  $\beta$ -dihydroxy-, methyl ester, II, 278.
- Methylcamphenilol, *p*-nitrobenzoate, II, 201.
- 2-Methyl-2- $\alpha$ - and - $\beta$ -carbethoxyethyl-4:5-benz-1:3-dioxoles, II, 376.
- 2-Methyl-2- $\alpha$ -carbethoxyisopropyl-4:5-benz-1:3-dioxole, II, 376.
- 4-Methylcarbostyryl-3-carboxylic acid, 6-nitro-, ethyl ester, II, 16.
- 2-Methyl-2- $\alpha$ - and - $\beta$ -carboxyethyl-4:5-benz-1:3-dioxoles, II, 376.
- 4-Methyl-5- $\beta$ -carboxyethylhydantoin, II, 271.
- 1-*N*-Methyl- $\beta$ -carboxypropionamido-2-methylnaphthalene, and its resolution, II, 306.
- 2-Methyl-2- $\alpha$ -carboxyisopropyl-4:5-benz-1:3-dioxole, II, 376.
- Methylcellulose, atheromatosis and thesaurosis from, III, 668.
- effect of ultra-violet light on solutions of, I, 109.
- foam time of, I, 172.
- 4-Methyl-3- $\beta\beta$ -dichloroethylcoumarin, 7-hydroxy-, and 5:7- and 7:8-dihydroxy-, and their acetates, II, 108.
- 4'-Methyl-3- $\beta\beta$ -dichloroethyl-1:2- $\alpha$ -naphthapyrone, II, 108.
- 4-Methyl-3- $\beta$ -chloroethylpyridine, 2:6-dichloro-, II, 328.
- $\alpha$ -Methyl- $\alpha'$ -chloromethylethylene oxide, II, 295.
- 4-Methyl-3- $\beta$ -chloromethylpyridine hydrochloride, II, 328.
- 4-Methyl-2-chloromethylpyrrole-3:5-dicarboxylic acid, diethyl ester, II, 381.
- 5-Methyl-3-chloromethyl-2-quinonemethide, II, 317.
- Methylcholanthrene, adenocarcinoma of stomach induced by, III, 397.
- cancer development in mouse skin due to, III, 396.
- disappearance of, injected into mice of different susceptibility to pulmonary tumours, III, 696.
- effect of cystine on reaction of mice to, III, 148.
- fluorescence of, I, 195.
- solvents for, benzene and methyl salicylate as, III, 533.
- effect of, in epidermal carcinogenesis, III, 757.
- tumour induction by, III, 147, 396.
- 1-Methylcholanthrene, and its picrate, II, 87.
- 20-Methylcholanthrene, carcinogenesis by, in skin of mouse, III, 613.
- Methylcholestan-2-hydroxy-, II, 102.
- Methylchroman-2:3-dicarboxylic acid, II, 374.
- Methylchrysenes, spectra of, absorption, ultra-violet, I, 132.
- 2-Methylcinchoneric acid, 6-chloro-, and its dimethyl ester, II, 331.
- Methylcopazoline. See 6'-Methylpyrido-3':4'-4:5-pyrimidine.
- 1-Methyleoumaran, 5-amino-, acetyl derivative, 3-nitro-, and 3-nitro-4-amino-, and its acetyl derivative, II, 373.
- 4-Methylcoumarin, 7-chloro-6-hydroxy-, 6-*mono*- and 7:8-*di*-hydroxy-, and their derivatives, II, 202.
- 8-Methylcoumarin, 7-hydroxy-, II, 98.
- 4-Methylcoumarin-3-acetic acid, 5:7-dihydroxy-, and its ethyl ester, II, 420.
- 7:8-dihydroxy-, II, 420.
- 8-Methylcoumarin-3-carboxylic acid, 7-hydroxy-, and its ethyl ester, II, 420.
- cis*-9-Methyl-1-decahydronaphthol, and its 3:5-dinitrobenzoate, II, 21.
- cis*-9-Methyl-1-decahydronaphthylamines, derivatives of, II, 21.
- 12-Methyldecahydrophenanthrene, II, 354.
- $\alpha$ -Methyldecan- $\beta$ -edione, II, 300.
- 3-Methylspirodecane, preparation and dehydrogenation of, II, 85.
- $\beta$ -Methyl-*n*-decan- $\gamma$ -ol,  $\beta$ -nitro-, II, 295.
- $\gamma$ -Methyl-*n*-decan- $\delta$ -ol,  $\gamma$ -nitro-, II, 295.
- $\alpha$ -Methyl-*n*-decanoic acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- $\beta$ -Methyl- $\beta$ -*n*-decylglutaric acid, and its derivatives, and  $\alpha\alpha'$ -dicyano-, imide, II, 345.
- $\alpha$ -Methyl- $\alpha$ -*n*-decyl-lauronitride, II, 345.
- 7-Methyldibenzthioindirubins, 5-chloro-, II, 333.
- 4-Methyldiethylcoumarins, *mono*- and *di*-hydroxy-, and their derivatives, II, 202.
- 4-Methyl-3:6-diethylcoumarin, 7-hydroxy-, and its acetyl derivatives, II, 109.
- 4'-Methyl-2:2-diethyl-3':4':5':6'-tetrahydrobenzopyran, 6''-hydroxy-, II, 111.
- 4-Methyl-4':5'-dihydrofrano-2':3':2:3-pyridine, 6-hydroxy-5-cyano-, II, 328.
- 2-Methyl-10:11-dihydrophenanthro[1, 2-*b*]furan, II, 318.
- 2-Methyl-10:11-dihydrophenanthro[1, 2-*b*]furan-1-carboxylic acid, and their esters, II, 318.
- 1-Methyl-3:3-di-3'-indoloxindole, II, 64.
- 5-Methyl-1:4-diketo-7:8-benzo-1:2:3:4-tetrahydro-3:6-naphthyridine-2-carboxylic acid, methyl ester, II, 31.
- Methyldimethylaminoazobenzenes, II, 192.
- 5-Methyl-6:7-dimethylethenechrysene, II, 87.
- 5-Methyl-6:7-dimethylene-7:8:9:10-tetrahydrochrysene, II, 87.
- Methyldinonylamine, II, 288.
- 5-Methyl-1:3-dioxan, 5-amino-, and 5-nitro-, II, 111.
- Methyldioxolan, oxygen absorption by, II, 376.
- 4-Methyldiphenyl sulphide, 2-chloro-6-nitro-, II, 49.
- 4'-Methyldiphenylsulphones, chloroamino-, and 2-chloro-6-nitro-, II, 49.
- 4''-Methyl-2:2-di-*n*-propyl-3':4':5':6'-tetrahydrobenzopyran, 6''-hydroxy-, II, 111.
- as-N*-Methyldipyrrolymethanes, synthesis of, II, 330.
- 5-Methyl-2:2'-dithienyl, *penta*- and *hexa*-bromo-, *penta*chloro- and 5-iodo-, II, 61, 62.
- 5-Methyl-2:2'-dithienyl-5'-carboxylic acid, and its methyl ester, II, 62.
- $\alpha$ -Methyldocosanoic acid, and its amide, II, 163.
- $\alpha$ -Methyldocosanoic acid, and its amide, II, 163.
- 9-Methyldodecahydrophenanthrene-10-carboxylic acid, II, 172, 320.
- $\alpha$ -Methyleicosanoic acid, and its amide, II, 163.
- Methylene groups, activation of, by carbon-carbon unsaturation, II, 19.
- halides, spectra of, infra-red, I, 132.
- Methylene glycol, ethers, preparation of, II, 255.
- 3:3'-Methylenebis-(4-hydroxycoumarin), anticoagulant action of, III, 873.
- as hemorrhagic agent, III, 798.
- effect of, on blood coagulation and prothrombin time, in dog and man, III, 90.
- on plasma-prothrombin time in hemorrhagic disease, III, 573.
- hypoprothrombinemia from, III, 798.
- prevention of thrombosis by, III, 664.
- toxicity of, III, 873.
- Methylenebis-*p*-toluenesulphonmethylamide, II, 164.
- Methylene-blue, determination of, I, 279; II, 44.
- inhibitory action of, on hepatoma induction, III, 463.
- polychrome, III, 570, 729.
- synergic action of, III, 54.
- Methylenecyclobutane, structure of, I, 390.
- Methylene-*d*-camphor, amino-, mutarotation of, I, 242.
- hydroxy-, mutarotation of, II, 106.
- Methylenediamines, reactions of, as ammonoaldehydes, II, 205.
- Methylenedioxy-rings, cleavage of, base-catalysed, II, 376.
- 6:7-Methylenedioxy-1-benzhydryl-3:4-dihydroisoquinoline, II, 115.
- 6:7-Methylenedioxy-1-benzhydryl-1:2:3:4-tetrahydroisoquinoline, and its derivatives, II, 115.
- $\alpha$ :3:4-Methylenedioxybenzylamino-8-benzylidenobutan- $\gamma$ -one, hydrochloride, II, 270.
- $\alpha$ :3:4-Methylenedioxybenzylaminobutan- $\gamma$ -one, hydrochloride, II, 270.
- 2-3':4'-Methylenedioxybenzylaminomethylcyclopentanone, hydrochloride, II, 270.
- $\omega$ :3:4-Methylenedioxybenzylaminopropiophenone, hydrochloride, II, 270.
- 3:4-Methylenedioxychalkone, 2'-hydroxy-, II, 268.
- 3':4'-Methylenedioxyflavanone, II, 268.
- 6:7-Methylenedioxy-3-methyl-3:4-dihydronaphthalene-1:2-dicarboxylic acid, anhydride of, II, 53.
- 6:7-Methylenedioxy-3-methylnaphthalene-1:2-dicarboxylic acid, anhydride of, II, 53.
- 3:4-Methylenedioxy-4'-methylstilbene,  $\alpha$ -cyano-, II, 257.
- 6:7-Methylenedioxy-3-methyl-1:2:3:4-tetrahydronaphthalene-1:2-dicarboxylic acid, and its derivatives, II, 53.
- 3':4'-Methylenedioxy-3- $\alpha$ -phenyl- $\beta$ -benzoyl ethylflavanone, and its 2:4-dinitrophenylhydrazones, II, 327.
- 3:4-Methylenedioxyphenyl- $\gamma$ -diethylaminopropylcarbinol, and its derivatives, II, 193.
- 3:4-Methylenedioxyphenyl- $\gamma$ -dimethylaminopropylcarbinol, II, 194.
- 4-3':4'-Methylenedioxyphenylhydantoin, II, 271.
- 3:4-Methylenedioxyphenyl- $\gamma$ -piperidinopropylcarbinol, II, 194.
- $\beta$ -Methylenedioxyphenylisopropylaminoformic acid,  $\beta$ -chloro-, and  $\omega$  $\beta$ -dichloro-, ethyl esters, II, 189.
- $\gamma$ -Methylenedioxyphenyl- $\alpha\alpha$ -tetramethyl-diaminodiphenylallene, II, 194.
- 6:7-Methylenedioxy-3-propyl-1:2:3:4-tetrahydronaphthalene-1:2-dicarboxylic acid, anhydride of, II, 54.
- 7:8-Methylenedioxyquinindoline, and its 10-acetyl derivative, II, 332.
- 3:4-Methylenedioxystilbene, 4'-chloro- $\alpha$ -cyano-,  $\alpha$ -cyano-, and 3'-nitro- $\alpha$ -cyano-, II, 257.
- 5(4)-3':4'-Methylenedioxy-styryl-gloxaline, 4(5)-nitro-, II, 237.
- 2-Methylenecyclohexanone, condensation of, with ethyl malonate, II, 409.
- Methylene-*D*-homöestrone, 17-hydroxy-, methyl ether, II, 200.
- Methyleneimines, cyclic, II, 164.
- Methylenemesoinositol tetraacetate, II, 310.
- Methylene ketones, hydroxy-, transformation of, into benzene derivatives, I, 401.
- Methylenemethyl ethyl ketone, hydroxy-, structure of, II, 180.
- Methylenemethyl  $\beta$ -phenylethyl ketone, hydroxy-, structure of, II, 180.
- 4:5-Methylenephenanthrene, acetyl derivatives, II, 85.
- 20-Methylenepregnane, 3( $\beta$ )-hydroxy-, acetyl derivative, II, 322.
- dl*-16-Methyl-*n*- and -*iso*-equilenins, II, 105.
- 16-Methyl-*dl*-*n*- and -*iso*-equilenin-16-carboxylic acids, methyl esters, methyl ethers, II, 105.
- $\alpha$ -Methyl- $\alpha$ -( $\gamma$ -ethoxypropyl)succinic acid, ethyl ester, II, 53.
- Methylethyl selenide dimercurichloride, II, 430.
- $\gamma$ -Methyl- $\alpha$ -ethylallyl alcohols, reactions of, and their derivatives, II, 127.
- 4-Methyl-6-ethyl-3-allylcoumarin, 7-hydroxy-, and its acetyl derivatives, II, 109.
- 5-Methyl-2- $\alpha$ -ethyl-*n*-amyl-1:3-dioxan, 5-amino-, and 5-nitro-, II, 111.
- 5-nitro-5-hydroxy-, II, 111.
- 4-Methyl-6-ethyl-3-butylcoumarin, 7-hydroxy-, and its acetyl derivatives, II, 109.
- 4-Methyl-6-ethyl-3- $\beta\beta$ -trichloro- $\alpha$ -hydroxyethylcoumarin, 7-*mono*-, and 7:8-*di*-hydroxy-, and their derivatives, II, 268.

- 4-Methyl-7-ethylcoumarin, 6-hydroxy-, and its acetate, II, 202.
- Methylethylene, trichloro-, addition to, of halogeno-acids, II, 70.
- 5-Methyl-7-ethyl-3:4-cyclohexenocoumarin, 5-hydroxy-, II, 110.
- 2-Methyl-1-ethylcyclopentane-1-carboxylamide, II, 143.
- 1-Methyl-7-ethylphenanthrene, II, 305.
- 4-Methyl-6-ethyl-3-propylcoumarin, 7-hydroxy-, and its acetyl derivatives, II, 109.
- 7:8-dihydroxy-, and its diacetate, II, 202.
- 4-Methyl-7-ethyl-3-n-propylcoumarin, 6-hydroxy-, II, 202.
- 5-Methyl-2- $\alpha$ -ethyl-*n*-propyl-1:3-dioxan, 5-amino- and 5-nitro-5-hydroxy-, II, 111.
- 4-Methyl-6-ethylpyridine-3-carboxylic lactone, 2:4-dihydroxy-, II, 30.
- 3-Methyl-4-ethylpyrroketone, 3:4-dichloro-, II, 204.
- 3-Methyl-4-ethylpyrroketone-5-carboxylic acid, 3:4-dichloro-, ethyl ester, II, 204.
- 3-Methyl-4-ethylpyrroketone-5:5'-dicarboxylic acid, 3:4-dichloro-, diethyl ester, II, 204.
- 2:5-[3-Methyl-4-ethylpyrroketone]di-3:1-methylisatin, II, 65.
- 3-Methyl-6-ethyl-1:2:3:6-tetrahydrophthalic anhydride, II, 293.
- $\alpha$ -Methyl- $\alpha$ -ethyl-*n*-valeric acid, and its chloride, II, 248.
- Methylevodionol, and its derivatives, II, 61.
- 5-Methylfurfuryl alcohol, and its derivatives, II, 373.
- $\alpha$ - and  $\beta$ -Methylgalactopyranoside barium sulphates, II, 79.
- $\alpha$ -Methylglutaric acid, dianilide, II, 29.
- 4(5)-Methylglyoxaline, 4(5)-hydroxy-, preparation of, II, 237.
- 5(4)-Methylglyoxaline, 4(5)-nitro-, methosulphate, II, 238.
- 1-Methylglyoxaline-4-carboxylic acid, 5-nitro-, and its amide, II, 238.
- 1-Methylglyoxaline-5-carboxylic acid, 4-nitro-, methyl ester, II, 238.
- 4-Methylglyoxaline-5-carboxylic acid, 2-hydroxy-, and 2-thiol-, ethyl esters, II, 381.
- $\beta$ -Methyl-*n*-hendecan- $\gamma$ -ol,  $\beta$ -nitro-, II, 295.
- $\gamma$ -Methyl-*n*-hendecan- $\delta$ -ol, II, 295.
- p*- $\alpha$ -Methyl-*n*-heptadecyltoluene, II, 84.
- $\beta$ -,  $\delta$ -, and  $\epsilon$ -Methyl-*n*-heptan- $\alpha$ -ols, II, 128.
- $\gamma$ -Methyl-*n*-heptan- $\delta$ -one,  $\gamma$ -bromo-, II, 248.
- $\beta$ -Methyl- $\Delta^4$ -*n*-heptenoic acid,  $\alpha$ -cyano-, ethyl ester, II, 133.
- $\alpha$ -Methyl-*n*-heptioic acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- $\beta$ - $\alpha'$ -Methyl-*n*-heptylaminoethyl alcohol, and its picrate, II, 394.
- p*- $\alpha$ -Methyl-*n*-heptyltoluene, II, 84.
- $\alpha$ -Methylhexacosanoic acid, and its amide, II, 163.
- $\alpha$ -Methylhexacosanoic acid, and its amide, II, 163.
- 2-Methyl-3-*n*-hexadecyl-5:6:7:8-tetrahydronaphthalene, II, 146.
- 2-Methyl-3-*n*-hexadecyl-1:4-naphthaquinone, and its quinol diacetate, II, 146.
- 2-Methyl-3-*n*-hexadecyl-5:6:7:8-tetrahydronaphthalene, II, 146.
- Methylcyclohexane, bromination of, II, 69.
- 6-Methylcyclohexane-1-acetic-2-propionic acid, diethyl ester, II, 27.
- Methylcyclohexane-1:1-dicarboxylic acids, stereoisomeric, II, 284.
- 1-Methylcyclohexane-1:2:3-triol, II, 170.
- $\gamma$ -Methyl-*n*-hexan- $\beta$ -ol,  $\gamma$ -nitro-, II, 295.
- 2-Methylcyclohexanol, arsenite, II, 343.
- 2-Methylcyclohexanone, 2-hydroxy-, phenylhydrazide, II, 317.
- 4-Methylcyclohexanone, 4-hydroxy-, 2:4-dinitrophenylhydrazide, II, 407.
- Methylcyclohexanone-2-carboxylic acid, 2-hydroxy-, acetyl derivative, ethyl ester, II, 369.
- 6-Methylcyclohexanone-2-carboxylic-2-propionic acid, diethyl ester, II, 27.
- 6-Methylcyclohexanone-2- $\beta$ -propionic acid, and its ethyl ester, II, 27.
- $\alpha$ -Methyl- $\Delta^8$ -*n*-hexenoic acid, isopropyl ester, II, 131.
- $\beta$ -Methyl- $\Delta^4$ -*n*-hexenoic acid,  $\alpha$ -cyano-, ethyl and isopropyl esters, II, 133.
- Methyl- $\Delta^2$ -cyclohexenol, and its hydrogen peroxide, II, 170.
- 1-Methyl- $\Delta^1$ -cyclohexen-3-one, physical constants of, I, 388.
- 2-Methylcyclohexenothiazole, and its picrate, II, 274.
- (4-Methyl- $\Delta^2$ -cyclohexenyl)formic acid, 3-cyano-, ethyl ester, II, 53.
- 6-Methyl- $\Delta^3$ -cyclohexenylmethyl alcohol, and its phenylurethane, II, 403.
- $\beta$ -2-Methyl- $\Delta^1$ -cyclohexenylpropionic acid, and its derivatives, II, 20.
- $\gamma$ -Methyl- $\Delta^8$ -*n*-hexin- $\gamma$ -ol, II, 246.
- $\alpha$ -Methyl-*n*-hexoic acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- $\beta$ -Methyl-*n*-hexophenone, and its 2:4-dinitrophenylhydrazide, II, 99.
- $\zeta$ -Methyl-*n*-hexyl bromide, II, 298.
- $\beta$ - $\alpha'$ -Methyl-*n*-hexylaminoethyl alcohol, II, 394.
- $\beta$ -Methylcyclohexylaminoethyl alcohols, and their picrates, II, 394.
- $\gamma$ -Methyl- $\beta'$ -isohexylaminopropan- $\alpha$ -ol, and its *p*-nitrobenzoate hydrochloride, II, 278.
- 5-Methyl-2-*n*-hexyl-1:3-dioxan, 5-amino- and 5-nitro-5-hydroxy-, II, 111.
- $\beta$ -Methyl- $\beta$ -*n*-hexylglutaric acid, II, 345.
- 5-Methyl-7-isohexyl-3:4-cyclohexenocoumarin, II, 111.
- 4-Methyl-*n*-hexylhydantoin, II, 271.
- 6-Methylcyclohexylidene-1-acetic-2-propionic acid, diethyl ester, II, 27.
- 2-3-Methylcyclohexylidene-3-methylcyclohexanone, and its semicarbazone, II, 317.
- Methyl isohexyl ketone, and its semicarbazone, II, 342.
- 3-Methyl-5-cyclohexyl-3-methylbenzyl alcohol, 2-hydroxy-, II, 374.
- Methylcyclohexyl- $\beta$ -phenylpropionic acids, di- $\alpha$ -1-cyano-, ethyl esters, II, 269.
- $\alpha$ -Methylcyclohexyl- $\beta$ -phenylpropionitrile,  $\alpha$ -1-cyano-, II, 259.
- 17 $\alpha$ -Methyl-*D*-homoandrostane, 17-amino-3:17 $\alpha$ -dihydroxy-, II, 104.
- $\Delta^4$ -17( $\alpha$ )-Methyl-*D*-homoandrostene-17( $\alpha$ )-ol-3:17-dione, effect of, on body weight and work performance of adrenalectomised rats, III, 595.
- $\Delta^5$ -17 $\alpha$ -Methyl-*D*-homoandrostene-17-one, 3:17 $\alpha$ -dihydroxy-, oxime, II, 104.
- 2-Methyl-2- $\alpha$ -hydroxyethyl-1:3-dioxolan, II, 327.
- 4-Methyl-5- $\beta$ -hydroxyethylpyridine, 2:6-dihydroxy-3-cyano-, ammonium salt, II, 330.
- 4-Methyl-5- $\alpha$ -hydroxyethylthiazole, and its derivatives, II, 384.
- 2-Methyl-2-1'-hydroxycyclohexyl-1:3-dioxolan, II, 327.
- Methyl- $\gamma$ -hydroxypropylaminoacetic acid, methyl ester, and its benzoate hydrochloride, II, 301.
- Methyl- $\gamma$ -hydroxypropylaniline, II, 278.
- 2-Methyl-2- $\alpha$ -hydroxyisopropyl-1:3-dioxolan, II, 327.
- 5-Methylindane, II, 280.
- 3-Methylindazole, 5-nitro-, II, 16.
- ms*-2:3-Methylindolylbenzoin, II, 64.
- 1-Methyl-3:3'-indolylidindole, II, 64.
- $\alpha$ -2-Methyl-3-indolyl- $\alpha$ -2'-methyl-3'-indolidene-ethane, derivatives of, II, 377.
- 1-Methylisatin[cytopyrrole]-blue, II, 64.
- 1-Methylisatin[cytopyrrole]indophenine, and its derivatives, II, 64.
- 1-Methylisatin[opsopyrrole]indophenine, II, 64.
- 1-Methylisatin[pyrrole]indophenine, II, 64.
- Methyl- $\beta$ -neolactopyranose heptaacetate, II, 80.
- N*-Methyl-lepidylamine, and its dihydrochloride, II, 288.
- $\beta$ -Methyl-*D*-manno-*D*-galaheptofuranoside, and its penta-acetate, II, 218.
- $\alpha$ - and  $\beta$ -Methyl-*D*-manno-*D*-galaheptosides, II, 218.
- $\alpha$ -Methylmannopyranoside barium sulphate, II, 79.
- 5-Methyl-1-*p*-methoxy- $\alpha$ -ethoxybenzylcoumaran-2-one, 1-bromo-, II, 268.
- Methyl  $\alpha$ -methoxyethyl ketone, II, 430.
- 5-Methyl-4-methoxymethyl-2-ethylpyridine, 3:5-diamino-, dihydrochloride, and 3:5-dihydroxy-, hydrobromide, II, 30.
- 2-Methyl- $\alpha$ -methyl- $\Delta$ -altromethyloside, II, 350.
- 2-Methyl- $\alpha$ -methyl- $\Delta$ -altroside, and its derivatives, II, 350.
- 1-Methyl-4:5-methylenephenanthrene, and its picrate, II, 86.
- 17-Methyl-20-methylenepregnan-3( $\beta$ )-ol, and its acetate, II, 322.
- 1-Methyl-3:2':3'- and -3:3':2'-methylindolylidindoles, II, 64.
- 2-Methyl-5:5-*N*-methylphenylene carbamyl-3:4-2':3'-indolo-2:5-dihydrofuran, 2-hydroxy-, II, 64.
- 2-Methylnaphthalene, sulphonated derivatives of, antihemorrhagic activity of, II, 285.
- 2-Methyl-1:4-naphthaquinol, and 3-amino-, and their derivatives, II, 285.
- hydrogen succinate acetate, II, 229.
- 3-Methyl- $\alpha$ -naphthaquinoline-2-carboxylic acid, II, 31.
- 2-Methyl-1:4-naphthaquinol-3-sulphonic acid, salts, II, 285.
- 2-Methyl-1:4-naphthaquinone, derivatives of, II, 229.
- determination of, II, 340; III, 330, 914.
- See also Menadione.
- 2-Methyl-1:4-naphthaquinone, 3-amino-, and 3-nitro-, and their salts, II, 285.
- 3-Methyl-1:4-naphthaquinone, 2-hydroxy-, metallic complexes of, II, 146.
- 2-Methyl-1:4-naphthaquinone-3-sulphonic acid, salts, II, 285.
- 2-Methyl-1-naphthol, 4-amino-, detection and determination of, II, 388.
- 3-Methyl-1-naphthol, 2-cyano-, II, 133.
- 2-Methyl-1-naphthionitrile, II, 92.
- $\beta$ -2-Methyl-1-naphthylacrylic acid,  $\beta$ -chloro-, and its resolution, II, 94.
- $\beta$ -2-Methyl-1-naphthyl- $\alpha$ -methylacrylic acid, and its resolution, II, 94.
- Methylisocitonic acid, 6-chloro-5-cyano-, and 5-cyano-, and their derivatives, II, 331.
- 4-Methyl-5-*p*-nitrobenzoyloxyethylthiazole, II, 363.
- 6-Methyl-*n*-nonane,  $\epsilon$ -amino-, and its picrate, II, 168.
- $\beta$ -Methyl-*n*-nonan- $\gamma$ -ol,  $\beta$ -nitro-, II, 295.
- $\gamma$ -Methyl-*n*-nonan- $\delta$ -ol,  $\gamma$ -nitro-, II, 295.
- $\beta$ -Methyl- $\Delta^4$ -*n*-nonenoic acid,  $\alpha$ -cyano-, ethyl ester, II, 133.
- $\beta$ -Methyl- $\Delta^7$ -noninen- $\beta$ -ol,  $\alpha$ -chloro-, II, 295.
- 6-Methyl- $\Delta^8$ -*n*-nonin- $\delta$ -ol, II, 246.
- $\alpha$ -Methyl-*n*-nonoic acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- Methylnonylamine, and its hydrochloride, II, 288.
- Methylnonylaminoethyl-6-methoxy-4-quinolylcarbinol, and its dipicrate, II, 288.
- 5-Methyl-2-*n*-nonyl-5-*n*-decylcyclohexane-1:3-dione, II, 346.
- 1-Methylnorhydrastinine, condensation products of, II, 31.
- 17-Methyl-21-norpregnane-3( $\beta$ ):21-diol, and its derivatives, II, 231.
- $\gamma$ -Methyl- $\Delta^8$ -octadecene,  $\gamma$ -hydroxy-, II, 269.
- $\gamma$ -Methyl- $\Delta^8$ -octadecine,  $\gamma$ -hydroxy-, II, 268.
- p*-Methyloctadecic acid, and its derivatives, II, 298.
- $\gamma$ -Methyl-*n*-octan- $\delta$ -ol,  $\gamma$ -nitro-, II, 295.
- $\epsilon$ -Methyloctan- $\beta$ -one, and its semicarbazone, II, 35.
- $\beta$ -Methyl- $\Delta^4$ -*n*-octenoic acid,  $\alpha$ -cyano-, ethyl ester, II, 133.
- $\alpha$ -Methyl-*n*-octoic acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- $\theta$ -Methyl-*n*-octyl bromide, II, 298.
- $\beta$ - $\alpha'$ -Methyl-*n*-octylaminoethyl alcohol, and its picrate, II, 394.
- $\beta$ - $\alpha'$ -Methyl-*n*-octylaminoethyl alcohol, and its picrate, II, 394.
- $\beta$ -Methyl- $\beta$ -octylglutarimide,  $\alpha\alpha'$ -dicyano-, II, 345.
- Methyl-orange, indicator action of, I, 247.
- 5-Methyl-3-isooxazolyldimethylcarbinol, ethyl ester, II, 384.
- 3-Methyl-5-isooxazolyldiethylcarbinol, II, 383.
- 3-Methyl-5-isooxazolyldimethylcarbinol, II, 383.
- 6-Methyl- $\Delta^4$ -pentadiene, II, 293.
- $\beta$ -Methyl-*n*-pentane,  $\alpha\gamma$ -diamino-, and its platinichloride, II, 168.

- 2-Methylcyclopentanecarboxylanilide, II, 143.  
 1-Methylcyclopentanecarboxylic acid, 2-cyano-2-hydroxy-, ethyl ester, II, 53.  
*cis*- and *trans*-1-Methylcyclopentane-1:2-dicarboxylic acids, II, 53.  
 2-Methylcyclopentane-1:2-dicarboxylic acid, 1-cyano-, diethyl ester, II, 53.  
 $\beta$ -Methylpentane- $\beta\delta\epsilon$ -tetracarboxylic acid, ethyl ester, II, 195.  
 $\beta$ -Methylpentane- $\beta\delta\epsilon$ -tricarboxylic acid, and its quinine salt, II, 195.  
 1-Methyl- $\Delta^2$ -cyclopentenecarboxylic acid, 2-cyano-, ethyl ester, II, 53.  
 1-Methyl- $\Delta^2$ -cyclopentene-1:2-dicarboxylic acid, II, 53.  
 3'-Methylcyclopentenophenanthrene, and its picrate, II, 365.  
 $\alpha$ -2-Methyl- $\Delta^1$ -cyclopentenylisobutyric acid, ethyl ester, II, 141.  
 $\Delta^{1'}$ -2-Methylcyclopentenyl- $\Delta^1$ -4-methoxycyclohexenylacetylene, II, 171.  
 $\alpha$ -2-Methylcyclopentenylisobutyric acid, and  $\alpha$ -hydroxy-, and their derivatives, II, 141.  
 2-Methylcyclopentyl methyl ketone, alkylation of, II, 143.  
 3-Methylcyclopentyl- $\beta$ -phenylpropionic acid, *di*- $\alpha$ -1-cyano-, ethyl ester, II, 259.  
 7-Methylperinaphthan-7-ol, II, 262.  
 7-Methylperinaphthene, II, 262.  
 Methylphaeophorbide-*a*, synthesis of, from chlorin-*c*, triester, II, 34.  
 Methylphaeophorbide-*b*-3-methanol, II, 34.  
 1-Methylphenanthrene, 3-acetyl derivative, and 3-amino-, and its acetyl derivative, II, 315.  
 1-Methylphenanthrene, 9-amino-, and its acetyl derivative, and 9-nitro-, II, 9.  
 1-Methylphenanthrene series, II, 9, 315.  
 2-Methylphenanthro[1, 2-*b*]furan, II, 318.  
 2-Methylphenanthro[1, 2-*b*]furan-1-carboxylic acid, and its esters, II, 318.  
 1-Methyl-3-phenanthrol, II, 315.  
 1-Methyl-9-phenanthrol, II, 9.  
 $p$ -Methylphenoxyacetone, semicarbazone, II, 314.  
 5'-Methylphenylcinnoline, 6-chloro-4-2'-hydroxy-, and its benzoate, II, 273.  
 Methyl  $\beta$ -phenylethyl ketone *dinitrophenylhydraz*-one, II, 140.  
 Methyl *N*- $\beta$ -phenylethylurethane, II, 113.  
*C*-Methylphloroglucinoldialdehyde, and its bis-phenylhydrazones, II, 260.  
 3-Methylphthalic anhydride, Friedel-Crafts and Grignard reactions with, II, 97.  
 4-Methyl-2-phthalimidomethylthiazole, 4-chloro-, II, 182.  
 3-Methylpicolinic acid, 3-hydroxy-, II, 29.  
 1-Methylpiperidine-3-acetic acid, methyl ester, derivatives of, II, 203.  
 20-Methyl- $\Delta^{5:17}$ -pregnadiene, 3( $\beta$ )-hydroxy-, and its acetyl derivative, II, 322.  
 20-Methyl- $\Delta^{5:16}$ -pregnadiene-3( $\beta$ ):21-diol, derivatives of, II, 366.  
 20-Methylpregnane-3( $\beta$ ):20-diol, II, 322.  
 17-Methylpregnane-3( $\beta$ ):21-diol-20-dione, II, 322.  
 17-Methylpregnane-3:20-dione, II, 322.  
 20-Methylallopregnane-3( $\beta$ ):16:17:21-tetraol, and its triacetate, II, 366.  
 20-Methylpregnane-3( $\beta$ ):16:20-triols, II, 230.  
 20-Methylallopregnane-3( $\beta$ ):20( $\alpha$  and  $\beta$ ):21-triols, and their diacetates, II, 368.  
 17-Methylpregnan-3( $\beta$ )-ol-20-one, II, 322.  
 20-Methyl- $\Delta^8$ -pregnene-3:20-diol, II, 322.  
 20-Methyl- $\Delta^{17:20}$ -pregnene-3:16-dione, II, 230.  
 20-Methyl- $\Delta^8$ -pregnene-3( $\beta$ ):16:17:21-tetraol 3:16:21-triacetate, II, 366.  
 20-Methyl- $\Delta^8$ -pregnene-3( $\beta$ ):16:20-triol, II, 230.  
 20-Methyl- $\Delta^8$ -pregnene-3( $\beta$ ):17( $\alpha$ ):21-triol, and its 3:21-diacetate, II, 366.  
 20-Methyl- $\Delta^8$ -pregnene-3( $\beta$ ):20( $\alpha$  and  $\beta$ ):21-triols, and their diacetates, II, 368.  
 16-Methyl- $\Delta^8$ -pregnen-3( $\beta$ )-ol-20-one, and its derivatives, II, 322.  
 16-Methylprogesterone, II, 322.  
 1-Methylcyclopropane, 2:3-diamino-, dibenzoyl derivative, II, 165.  
 2-Methylcyclopropanecarboxyethylamide, II, 143.  
 2-Methylcyclopropanecarboxyisopropylamide, II, 143.  
 $\beta$ -Methylpropane- $\alpha\gamma$ -disulphonic anhydride and dianilide, II, 296.  
 $\beta$ -Methylpropane- $\beta$ -sulphonyl chloride, II, 297.  
 Methyl isopropenyl ketone, polymerides of, and their derivatives, II, 164.  
 3-Methyl-5-isopropenylisoxazole, II, 383.  
 1-Methyl-2-isopropenylisoxazepane, II, 225.  
 4- $\alpha$ -Methylpropenylphenol, 2:6-dichloro-, II, 283.  
 $\beta$ -Methylisopropyl alcohol,  $\alpha\gamma$ -dichloro-, II, 165.  
 Methyl-*n*-propyl selenide mercurichloride, II, 430.  
 2-Methyl-5-isopropylbenzenediazonium nitrate, 4-hydroxy-, II, 193.  
 2-Methyl-5-isopropylbenzenesulphonamide, II, 136.  
 4-Methyl-6-propyl-3- $\beta\beta\beta$ -trichloro- $\alpha$ -hydroxyethylcoumarin, 7-hydroxy-, and its acetate, II, 268.  
 7-Methyl-4-propylcoumarin, 5-hydroxy-, and its derivatives, II, 375.  
 5-Methyl-2-*n*-propyl-1:3-dioxan, 5-amino-, and 5-nitro-, II, 111.  
 5-amino- and 5-nitro-5-hydroxy-, II, 111.  
 $\beta$ -Methyl- $\Delta\beta$ -propylene- $\alpha$ -sulphonic acid, and its derivatives, II, 73.  
 4-Methyl-4-propylhydantoin, II, 271.  
 Methyl *n*-propyl ketone, reduction of, to pentane at cadmium-bismuth cathodes, I, 25.  
 Methyl propyl ketones, chloro-, II, 300.  
 4-Methyl-2-isopropyl-3-methyl- $\Delta^2$ -cyclopentenone, II, 363.  
 $\beta$ -Methyl- $\gamma$ -isopropyl- $\Delta^8$ -*n*-nomin- $\gamma$ -ol, II, 246.  
 2-Methyl-2-*n*-propyloxazolidine, II, 394.  
 2-Methyl-1-isopropylcyclopentanecarboxylic acid, and its derivatives, II, 141.  
 2-Methyl-1-*n*- and -*iso*-propylcyclopentane-1-carboxylic acids, and their anilides, II, 143.  
 2-Methyl-1-isopropyl- $\Delta^2$ -cyclopentenecarboxylic acid, ethyl ester, II, 141.  
 1'-Methyl-3-*n*-propylthia-2-carboyanine iodide, II, 156.  
 2-Methylpyridine, 4:5-diamino-, and its dihydrochloride, 6-chloro-5-cyano-, and 5-cyano-, II, 331.  
 4-Methylpyridine, 4-hydroxy-, hydrochloride, II, 422.  
 4'-Methylpyridinium chloride-2'-benzoyloxy-1:1'-azonaphthalene, II, 196.  
 6'-Methylpyrido-3':4'-4:5-pyridazine, 3-amino-6-hydroxy-, and its hydrochloride, II, 331.  
 6'-Methylpyrido-3':4'-4:5-pyrimidine, 3:6-dihydroxy-, II, 331.  
 6'-Methylpyrido-3':4'-4:3-pyrroleimine, 2-hydroxy-, and its salts, II, 331.  
 Methylpyridoquinolines, chloro-, and hydroxy-, II, 206.  
 Methyl *N*- $\beta$ -4-pyridylethylurethane, and its derivatives, II, 113.  
 1-2'-Methyl-5'-pyrimidylmethyl-2-methyl-3- $\beta$ -hydroxyethylpyridinium bromide hydrobromide, 1-4'-amino-, utilisation of, by fungi, III, 60.  
 3-2'-Methyl-5'-pyrimidylmethyl-4-methyl-5- $\alpha$ -hydroxyethylthiazolium bromide hydrobromide, 3-4'-amino-, II, 384.  
 5-Methyl-2-pyrone, II, 29.  
 5-Methyl-2-pyrone-6-carboxylic acid, and its methyl ester, II, 29.  
 6-Methyl-2-pyrone-5-carboxylic acid, methyl ester, II, 29.  
 6-Methylpyrrolidin, II, 65.  
 3(or 4)-Methylpyrrole, 2-hydroxy-, II, 333.  
 4-Methylpyrrole-2-acetic acid, 3-hydroxy-, ethyl ester, and its *p*-nitrobenzoyl derivative, II, 287.  
 4-Methylpyrrole-5-carboxylic acid, 3-bromo-, ethyl ester, II, 331.  
 3-Methylpyrrole-2:4-dicarboxylic acid, diethyl ester, II, 381.  
 1-Methylpyrrolidine-2-acetic acid, ethyl ester, synthesis of, II, 287.  
 2-Methylpyrrolizidine, synthesis of, II, 287.  
 2-Methylpyrrolizidine, 2-hydroxy-, and its picrolonate, II, 287.  
 1-Methylpyrrol-5-one-2-acetic acid, ethyl ester and methylamide, II, 426.  
 3-Methyl-4- $\beta$ -pyrrolopyruvic acid, ethyl ester, II, 427.  
 5-Methylquinol  $\alpha$ -bromodecyl and decamethylene ethers, 2-bromo-, II, 195.  
 Methylquinolines, synthesis of, and their m.ps., II, 378.  
 2-Methylquinoline, 5-amino-4-hydroxy-, and its acetyl derivative, II, 206.  
 4-chloro-6-amino-, and its 6-acetyl derivative, and 4-hydroxy-, II, 330.  
 3-Methylquinoline, 6-bromo-, and its picrate, II, 378.  
 4-Methylquinoline, 8-amino-, 8-amino-2-hydroxy-, 8-chloro-, 2-chloro-6- and -8-amino- and -nitro-, and 8-nitro-2-hydroxy-, II, 150.  
 6-chloro-4-amino-, and its dihydrochloride, II, 288.  
 5-Methylquinoline, 8-amino-, and its salts, and 8-nitro-, II, 378.  
 2-Methylquinoline-3:4-dicarboxylimidoacetic acid, ethyl ester, II, 31.  
 3-Methylrharnose phenylosazone, II, 302.  
 Methylselenium tribromide, II, 430.  
 Methylsuccinic acids,  $\alpha$ -amino-. See Methylaspartic acids.  
*N*'-Methylsulphathiazole, treatment with, of malaria in monkeys, III, 840.  
 Methyltestosterone, III, 390.  
 effect of, on metabolism of rats, III, 815.  
 effectiveness of, conditions modifying, III, 752.  
 hypermetabolism induced by, III, 606.  
 in gynaecology, oral administration of, III, 606.  
 treatment with, of castrates and eunuchoid, III, 690.  
 of eunuchoidism, orally, III, 315.  
 of hypogonadism, III, 127.  
 of testicular deficiency, III, 128.  
 $\alpha$ -Methyltetracosanoic acid, and its amide, II, 163.  
 $\alpha$ -Methyltetracosanoic acid, and its amide, II, 163.  
 2 $\alpha$ -Methyltetradecahydrochrysene-1:2:7:8-tetracarboxylic acid, anhydride, II, 143.  
 $\beta$ -Methyl-*n*-tetradecan- $\alpha$ -ol, II, 128.  
 1'-Methyl-1':2':3':4'-tetrahydro-3:4-benzopyrene, 4'-hydroxy-, II, 50.  
 11-Methyl-1:2:3:4-tetrahydro-1-chrysenylacetic acid, II, 87.  
 3-Methyl-5- $\alpha\gamma\gamma$ -tetramethyl-*n*-butylbenzaldehyde, 2-hydroxy-, oxime, II, 314.  
*dl*-5-Methylthietrone, 3:4-dihydroxy-, II, 3.  
 4-Methylthiazole, 2-thiol-, II, 36.  
 5-Methylthiazole, and its salts, II, 290.  
 3-Methylthiazolone-2-*p*-aminobenzenesulphonamide, II, 383.  
 4-Methylthioindigo, 6-chloro-, II, 333.  
 7-Methylthioindigo, 5-chloro-, II, 333.  
 4-Methylthioindirubin, 6-chloro-, II, 333.  
 Methylthioindoxylaldehydes, chloro-, and their phenylhydrazones, II, 333.  
 Methylthiol, heat capacity, entropy, heats of fusion, transition, and vaporisation, and vapour pressures of, I, 138.  
 1-Methylthiolbenzthiazole, dipole moment of, I, 289.  
 2-Methylthiol-4:5-dimethylthiazole, and its picrate, II, 36.  
 2-Methylthiol-4-methylthiazole, and its picrate, II, 36.  
 9-Methylthiolphenanthrene, II, 180.  
 1-Methylthiol-2-phenylbenzthiazolinium *p*-toluenesulphonate, II, 239.  
 $p$ -Methylthiol- $\beta$ -phenylethyl alcohol, and its derivatives, II, 11.  
 $\gamma$ -Methylthiolpropyl alcohol, formation of, from methionine, II, 47.  
 $\gamma$ -Methylthiolpropylamine, formation of, from methionine, II, 47.  
 4-Methyl-2-thionaphthen-5'-chloro-7-methyl-2'-indoleindigotin, 6-chloro-, II, 203.  
 3-(3-Methylthionaphthen)-2'-indoleindigos, chloro-, II, 333.  
 4-Methylthio-oxindole-3-aldehyde, 6-chloro-, phenylhydrazones, II, 333.  
*S*-Methylisothiurea sulphate, effect of, on circulation, III, 483.  
 2-Methylthioxanthene, 6- and 7-nitro-, II, 63.  
 2-Methylthioxanthone, 6- and 7-nitro-, and their dioxides, II, 63.  
 Methyl triethylcarbinyl ketone, and its bromomagnesium enolate, II, 393.  
 Methyl  $\alpha\gamma\gamma$ -trimethyl- $\alpha$ -*tert*.-butyl-*n*-butyl ketone, II, 348.

- $\beta$ -Methyltrimethylene glycol**, and its derivatives, II, 389.
- $\beta$ -Methyltrimethylene- $\alpha$ -bis-2-naphthyl ether**,  $\beta$ -hydroxy-, II, 165.
- N-Methyltrimethyleneimine methiodide**, II, 165.
- 1-Methyl-2-trithienyl**, II, 62.
- $\alpha$ -Methyl- $n$ -undecic acid**,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- 5-Methyl-2- $n$ -undecyl-1:3-dioxan**, 5-amino- and 5-nitro-5-hydroxy-, II, 111.
- $p$ - $\alpha$ -Methyl- $n$ -undecyltoluene**, II, 84.
- $\alpha$ -Methylvaleric acid**,  $\alpha$ -dibromo-, ethyl ester, II, 53.
- $\beta$ -Methyl- $\alpha$ -isovaleryl-lævulic acid**, methyl ester, II, 300.
- 4-Methyl-3-vinylpyridine**, synthesis of, II, 328.
- 2-Methylxyloseanilide**, II, 135.
- Metmyoglobin**, mixtures of, with myoglobin, oxidation-reduction potentials of, III, 736.
- Metrazol**. See **Cardiazol**.
- Metrorrhagia**, in puberty, III, 139.
- Meyner's bundle**, anatomy of, in man, III, 108.
- Mica**, lithia, composition and optical properties of, I, 346.
- muscovite, spots in, I, 216.
- vacuum-tight sealing of, to glass and metals, I, 308.
- Mice**, castrate and normal, body and muscle growth in, III, 239.
- chromosome breakage and sterility in, III, 363.
- decr. See *Peromyscus maniculatus*.
- effect on, of radioactive chlorine isotope, III, 158.
- female, immature, effect of anterior pituitary on, III, 230.
- flexed-tailed, anaemia of, III, 366.
- growth and life maintenance of, effect of pantothenic acid on, III, 254.
- growth rates in inbred strains of, III, 37.
- male, female mating behaviour in, after treatment, III, 601.
- milking apparatus for, III, 723.
- requirement of, for pantothenic acid and new factor of vitamin-B complex, III, 471.
- strain C, transfer of strain C<sub>3</sub>H milk influence through generations of, III, 400.
- superfotation in, III, 187.
- synthetic diet for, inadequacy of, III, 156.
- X-zone of adrenal cortex in inbred strains of, III, 400.
- Micelles**, size of, determination of, I, 378.
- Michael condensation**, II, 19, 20.
- Microchemistry**, I, 250, 306.
- Micrococci**, nuclear apparatus and sexual mechanism in, III, 781.
- Micrococcus lysodeikticus***, action on, of sulphonamides, III, 545.
- enzymic activity and growth of, and  $pH$  of medium, III, 852.
- Micro-electrophoresis**. See under **Electrophoresis**.
- Microglia**, existence of, in neurohypophysis, III, 84.
- Microlite**, crystalline morphology of, I, 160.
- Micromalthus***, paedogenesis in, III, 727.
- Micro-organisms**, aerobic, diffusing factor in, III, 782.
- anaerobiosis with, in senescent lakes in winter, III, 643.
- biochemistry of, II, 24, 242.
- biotin requirement of, measured with avidin, III, 718.
- cellulose-splitting, in human faeces, III, 818.
- culture of, fertilisers for, III, 718.
- Gram-negative and -positive, staining of, III, 345.
- growth of, effect on, of micro-organism and plant extracts, III, 266.
- of pantothenic and succinic acids, III, 851.
- of sulphanilamides, III, 938.
- of vitamin-C, III, 717.
- growth substances for, nicotinamide and nicotinic acid as, III, 61.
- pathogenic, synergistic action of azochloramide and sulphamido-compounds on, III, 626.
- pleuropneumonia-like, growth of, on chorio-allantoic membranes, III, 941.
- Micro-organisms**, saprophytic, bactericidal and bacteriostatic agents from, III, 344.
- soil. See under **Soils**.
- time-survivor curves of, III, 643.
- ultra-violet irradiated, growth factors produced by, III, 344.
- Microphotometers**. See under **Photometers**.
- Microphthalmia**, unilateral, with congenital anterior synechia and syndactyly, III, 113.
- Microrespirometers**, volumetric, III, 297.
- Microscopes**, achromatic reflexion, I, 27.
- corneal, and slit-lamp, III, 742.
- electron, I, 213, 281; III, 76.
- crystalline reflexion in images of, I, 319.
- emission, resolving power of, I, 281.
- for acceleration potentials, I, 250.
- hot stages for, I, 308.
- lens corrections in, I, 28.
- limit of performance of, I, 126.
- magnetic, 300-kilovolt, I, 157.
- resolution of particles by, I, 343.
- resolving power of, I, 319.
- stereoscopic work with, I, 28.
- surface studies with, I, 342.
- electron and optical, potentialities of, III, 433.
- fluorescence, in bacteriology, III, 951.
- hot-stage, thermal analysis with, I, 263, 398.
- in biology, III, 793.
- inverted, III, 788.
- measuring, I, 27, 75.
- phosphorescence, I, 411.
- X-ray, I, 249.
- slides for, device for marking fields on, III, 723.
- labels for, III, 426.
- washing device for, III, 570.
- ultra-, for demonstrations, I, 212.
- particle counting by, I, 412.
- slit, counting particles with, I, 116.
- Microscopy**, cellophane cover slips for, III, 951.
- electron, object thickness determination in, I, 157.
- in forensic medicine, III, 279.
- mounts for, deep chamber, III, 8.
- mounting media for, III, 426.
- plasticised polystyrene, III, 8.
- myelin sheath demonstration in frozen sections in, III, 434.
- of dry-mount objects, clamp for, III, 182.
- paraffin for imbedding purposes in, III, 793.
- paraffin-resin infiltrating and imbedding media for, III, 190.
- phase-contrast, I, 249.
- preparation of tissues for, III, 85, 434.
- sections for, clarite in embedding paraffin for, III, 729.
- sectioning and staining refractory materials in paraffin in, III, 729.
- sectioning bones and tissues by celloidin and paraffin methods in, III, 434.
- staining rack for cover-glass preparations in, III, 729.
- ultra-, depth measurement of objects in, I, 377.
- washing bobber for, III, 729.
- Microspira astuarii***, occurrence of, in Buckingham Canal at Madras, III, 272.
- Microsporium***, spore size in, III, 272.
- Microtome**, knives of, sharpener for, III, 660.
- Micturition**, reflexes of, in cats, III, 300.
- Migraine**, treatment of, with potassium thiocyanate, III, 926.
- Milk**, allergy to, III, 499.
- intestinal symptoms of, III, 946.
- as source of vitamin-B<sub>12</sub>, III, 471.
- biotin isolation from, III, 540.
- cow's, ascorbic acid in, at various stages of lactation, III, 41.
- in pregnancy, III, 833.
- mastitis in relation to, III, 329.
- chemical enrichment of, by diethylstilbestrol and its dipropionate, III, 238.
- copper-containing protein isolated from, III, 821.
- production of, in relation to body size, III, 396.
- determination in, of citric acid, II, 160.
- effect of, on gizzard erosion in chicks, III, 41.
- ejection of, III, 389.
- fat percentage and yield of, III, 396.
- Milk**, high-vitamin-A, diet producing, III, 829.
- human,  $Rh$  antibody in, III, 572.
- composition of, III, 146.
- nicotinamide in, III, 815, 831.
- pentothal in, III, 841.
- thiamin content of, III, 470.
- vitamin increase in, after nicotinamide ingestion, III, 905.
- nutritive value of, forms of, III, 326.
- Palestinian, vitamin-A and -C seasonal fluctuation in, III, 153.
- plate count of, medium for, III, 644.
- proteins of, occurrence of hydroxyglutamic acid in, III, 315.
- riboflavin content of, III, 328.
- secretion of, effect of light on, III, 340.
- in hypophysectomised pregnant mice, III, 123.
- mechanism of, III, 29.
- substitute for, soya-bean. See **Calsoy**.
- Mills-Nixon effect** with thiazoles, II, 209.
- Mines**, air-conditioning in, III, 55.
- Ashanti, post-mineralisation fissuring at, I, 76.
- Night Hawk Lake, Ontario, wall rock of, I, 284.
- Miners**, fireclay, Stourbridge, silicosis in, III, 338.
- metal, health problems of, III, 485.
- Minerals**, Ashanti mine, fissuring in, I, 76.
- colouring in, I, 217.
- Copper Creek, Arizona pipe deposits of, I, 346.
- deposition of, at Steamboat Springs, Nevada, I, 215.
- dry polishing of specimens of, I, 214.
- grossularoid group, I, 219.
- Guéret massif, genesis and relationship of, I, 412.
- hardness of, to scratching, effect on, of adsorption, I, 344.
- heavy sedimentary deposits of, I, 347.
- hydrothermal, of specimen Mountain volcanics, Colorado, I, 215.
- identification of, by X-rays, I, 216.
- in animal nutrition, III, 405.
- lava, of Puy chain, I, 284.
- molten, density of, I, 123.
- New Hampshire, regional metamorphism in, I, 345.
- opaque, polishing of, I, 343.
- ore, identification of, by X-ray powder patterns, I, 344.
- Polaris mine, Idaho, I, 347.
- radioactive. See **Radioactive minerals**.
- retrograde metamorphism of, I, 217.
- S. California, I, 346.
- Mineralisation**, flow of solutions in, I, 344.
- Mint plants**, photoperiodism of, III, 785.
- Miotics**, III, 448.
- morphine, mechanism of, III, 589.
- Mira Ceti**, spectrum of, near ultra-violet and violet, I, 349.
- Mirabilite**, in Ansh-Bulat lake, I, 120.
- Mirrors**, diagnostic, antifogging action of soap on, III, 788.
- silver, preparation of, I, 379.
- Miscibility**, gaps in, I, 201.
- Missiles**, high-velocity, wounding mechanism of, III, 462.
- Mitochondria**, chemical composition of, III, 660.
- effect on, of growth and nutrition, III, 508.
- Mitosis**, action of sex hormone in, III, 249.
- in acanthosis produced by hormones, III, 286.
- substances inhibiting, and their relation to natural substances, III, 793.
- Mixtures**, additivity of specific weights and volumes in, I, 51.
- binary, graphical interconversions of, I, 293.
- statistical mechanics of, I, 205, 293.
- differentiation of substances in, II, 387.
- Moderator band**, incidence and size of, in man and mammals, III, 505.
- Mole**, hydatiform. See **Hydatiform moles**.
- Molecular association**, I, 61.
- equilibria of, I, 62.
- asymmetry, II, 9.
- layers, condensed, superliquids in, I, 295.
- rearrangements, involving optically active radicals, II, 92.

- Molecular structure during reactions**, II, 286.  
volume. See under Volume.
- Molecular weights**, determination of, by Signer method, I, 118.  
in solutions, I, 118.  
of dissolved substances, I, 294.  
solvent for, I, 358.  
high, mechanical properties of substances with, I, 327.  
of chain polymerides, I, 237.  
of liquids, viscosity and, I, 293.  
of macromolecular compounds, I, 231, 237, 364.
- Molecules**, aggregates of, light absorption and space arrangement for, I, 199.  
anisotropy of, I, 317.  
diatomic, potential energy and interatomic distance in, I, 130.  
polyatomic, ionisation potentials of, I, 7.  
spectra of, electronic, I, 80.  
infra-red and Raman, I, 83.  
vibration-rotation energies of, I, 131, 287.  
centres of van der Waals attraction in, I, 197.  
chain, kinetics of degradation of, I, 301.  
complex, models of, I, 318.  
second virial coefficients and forces between, I, 261.  
dipole, reaction of, with ions, I, 400.  
dipole moments of, I, 43.  
and structure, I, 227.  
dispersion, electronic spectra, and polarisation of, I, 192.  
electric polarisation and vibrations of, I, 43.  
energies between, I, 197.  
heat capacities of, I, 14.  
interaction between metal surfaces and, I, 163.  
long chain-form degradation of, I, 370.  
mean free path and related functions of, I, 290.  
mean "tarrying" path in, I, 197.  
models of, I, 215.  
with free rotation, I, 282.  
momentum distribution in, I, 134.  
neutral, exchange forces between metal surfaces and, I, 37.  
organic, containing methyl groups, internal rotation in, I, 385.  
peak of property-composition curve and point of maximum deviation from addition rule of, I, 45.  
structure of, and magnetism, I, 318.  
two-centre integrals in theory of, I, 197.  
"super," formation of. See Molecular association.
- surface tension of, in relation to dimensions, I, 85.  
with internal rotation, energy and thermodynamics of, I, 259, 317.  
with internal torsions, partition functions of, I, 84, 318.  
XY<sub>2</sub>, symmetrical, valency in, I, 317.  
XY<sub>3</sub>, vibration-rotation energies of, I, 39.  
X<sub>2</sub>Y<sub>2</sub>, spectra of, near infra-red, I, 131.
- Molcula**, cross- and self-fertilisation in, III, 867.
- Molluscum contagiosum**, treatment of, with sulphapyridine, III, 768.
- Molybdates**. See under Molybdenum.
- Molybdenum**, electrodeposition potential of, I, 268.  
isotopes of, I, 161.  
reduction of solutions of, I, 275.  
thermal conductivity of, I, 15.  
thermal expansion of, I, 167.  
thermionic emission of, I, 30.  
vaporisation of, I, 286.
- Molybdenum alloys** with platinum, crystal structure of, I, 141.
- Molybdenum compounds**, electrolytic and polarographic reduction of, I, 272.
- Molybdenum boride**, I, 406.
- disulphide**, catalytic action of, in isomerisation of monocyclic hydrocarbons, II, 220.  
sulphides, I, 336.
- Molybdates**, detection of, I, 340.
- Paramolybdates**, composition and constitution of, I, 181.
- Molybdenum organic compounds** :—  
Molybdenum thiocyanate, colour reaction of, with toluene-3:4-dithiol, I, 181.
- Molybdenum determination** :—  
determination of, I, 340.  
by potentiometric titration, in presence of iron and vanadium, I, 376.
- Molybdenum-blue reaction**, applications of, I, 112.
- Momordica charantia**, chemistry and pharmacology of, III, 928.
- Mongolism**, head malformation in, III, 566.
- Monkeys**, effect on, of sulphapyridine and sulphathiazole, III, 336.  
platyrrhine, geniculate body in, III, 108.  
proprioceptive functions in, effect of medial lemniscus section on, III, 584.  
rhesus, effect of responses of, to oestrogens, III, 131.  
See also *Macaca mulatta*.
- Monocrotaline**, action of, III, 771.
- Monolate**, treatment with, of varicose veins, III, 441.
- Monolayers**. See Films, unimolecular.
- Mononucleosis**, infectious, III, 650.  
anæmia in, III, 872.  
diagnosis of, tests for, III, 945.  
serology of, III, 783.  
treatment of, with sulphathiazole, III, 707.  
See also Glandular fever.
- Monsters**, dicephalic, diagnosis of, by X-ray examination, III, 362.  
double, in relation to heredity and sex determination, III, 363.  
sirenomelian, III, 429.
- Montagnetol**, constitution of, II, 195.
- Montmorillonite**, benzidine test for, I, 348.  
spectra of, infra-red, I, 124.
- Morphine**, and its derivatives, III, 842.  
degradation product of, II, 275.  
derivatives, structure of, in relation to urinary excretion, III, 483.  
effect of, on alimentary tract, III, 167.  
on coronary vessels, III, 841.  
on electrocardiogram of man, III, 925.  
on intestines in dog, III, 144.  
on labour, III, 549.  
on skin perceptions, III, 633.  
esters, deacetylation of, III, 925.  
fate of, in addicts, III, 633.  
hemodynamic effect of, injected into man, III, 632.  
mitotic action of. See Mitotics.  
poisoning by. See under Poisoning.  
toxicity of, III, 925.
- apomorphine**, treatment with, of tachycardia, III, 371.
- Morphogenesis**, early, chemical interference experiments with, in chicks, III, 659.
- Morpholidophosphoric acid**, diphenyl ester, II, 281.
- Morpholine**, density of aqueous solutions of, I, 90.  
specific heat of, I, 234.
- β-Morpholinoisobutyl alcohol**, II, 334.
- γ-Morpholino-ββ-dimethyl-*n*-propyl alcohol**, esters, II, 334.
- 2-Morpholino-4-ethoxyquinoline**, II, 378.
- 4-Morpholino-2-ethoxyquinoline**, II, 378.
- β-Morpholinoethyl alcohol**, esters, II, 334.
- N*-β-Morpholinoethyl-*N'*-*p*-dimethylamino-phenylthiocarbamide hydrochloride**, II, 88.
- N*-β-Morpholinoethyl-*N'*-phenylthiocarbamide hydrochloride**, II, 88.
- 2-Morpholino-4-hydroxyquinoline**, II, 378.
- 4-Morpholino-6-methoxy-2-methylquinoline**, II, 379.
- 4-Morpholinophosphinic acid**, 3-amino-, and 3-nitro-, II, 122.
- β-Morpholinoisopropyl alcohol**, II, 334.
- 4-γ-Morpholino-*n*-propylamino-6-methoxy-2-methylquinoline**, II, 379.
- α-Morpholino-β-tetrahydroquinolino-β-phenylpropionophenone**, II, 149.
- Mosquitoes**. See *Aedes aegypti*.
- Moths**, saturnid, development of, effect of temperature on, III, 899.
- Moulds**, anti-bacterial substances from, III, 174, 266, 267, 420, 490.
- Moulds**, carbon dioxide assimilation by, III, 266.  
metabolic products of, synthesis of compounds related to, II, 260.
- Mountain ash**, European; berries, extract of, antihemorrhagic activity of, III, 664.
- Mounting media**. See under Microscopy.
- Mouth**, epitheliomas of, transplantable, in cat-fish, III, 824.  
ulceration of corners of, in pregnancy, due to vitamin deficiency, III, 327.
- Month washes**, III, 547.
- Mucic acid-dibenziminazole**, and its derivatives, II, 248.
- Mucilage**, seed, II, 135.
- Mucin**, antibodies against, III, 274.  
enzymes hydrolysing, III, 641.
- Muck-silt**, deposits of, at Fairbanks, Alaska, I, 217.
- Muonic acid**, *trans-trans*-methyl ester, crystal structure of, I, 319.
- Mucor varnannianus**, symbiosis of, with *Rhodotorula rubra*, III, 849.
- Mucus membrane**. See under Membranes.
- Mud flats**, marine, bacterial flora of, III, 643.
- Müllerian duct**, relation of, to Wolffian duct, and malformations, III, 80.
- Murmanite**, Lovozero tundra, I, 348.
- Mus musculus**. See Mice.
- Muscle**, action of, and glycogen phosphorylation, III, 582.  
action potentials of, apparatus for recording, III, 515.  
adductor, slow, inhibition of, in scallop, III, 584.  
aerobic and anaerobic changes in, in seals during diving, III, 444.  
ammonium and potassium ion interchange in, III, 299.  
atrophy of, infantile, of spinal origin, III, 446.  
progressive, dystrophic, neural, and spinal forms of, in one family, III, 675.  
treatment of, with vitamin-E, III, 583.  
bicarbonate ion distribution in, in mammals, III, 880.  
birefringence and contractile power of, during atrophy from neurone lesions or tenotomy, III, 15.  
carbohydrate metabolism in, III, 44.  
carbohydrate and phosphorus metabolism in, of overheated animals, III, 444.  
carbon dioxide equilibrium in, in mammals, III, 880.  
cardiac, cytochrome oxidase spectrum from, III, 715.  
determination in, of adreno-cortical hormones, III, 308.  
disease of, diagnosis of, by vibrocardiogram, III, 877.  
dysfunction of, due to vitamin-B<sub>1</sub> deficiency, III, 578.  
effect on, of anoxæmia in isolated heart, III, 800.  
fibres of, age changes in size of, in marsupials, III, 577.  
histochemistry of, in relation to age, III, 582.  
infarction of, after coronary occlusion, fluoroscopic diagnosis of, III, 371.  
death from, III, 666.  
diagnosis of, with roentgenkymography, III, 371.  
prognosis in, III, 371, 578.  
lesions of, III, 666.  
relation of tachycardia and pulse-temperature disproportion to, III, 801.  
purines in, effect of adrenaline, acetylcholine, and nervous stimulation on, III, 94.  
ventricular, electrolyte composition of, III, 438.  
cardiac and skeletal, action on, of iodoacetic acid, III, 671.  
contraction of, in relation to enzyme-substrate combination, III, 736.  
leptonic analysis and optical determinations of, III, 671.  
relation between mechanogram and electromyogram in, III, 298.  
copper content of, in fish, III, 671.

- Muscle**, creatine in, origin of, III, 736, 880.  
 curarised, nature of "endplate potential" in, III, 444.  
 dehydrated, X-ray structure of, III, 715.  
 denervated, electrotherapy of, III, 584.  
 determination in, of creatine, by dinitrobenzoate, III, 736.  
 dilator iridis, action on, of ergotamine and yohimbine, III, 840.  
 disorders in, potassium in, III, 737.  
 treatment of, with vitamin-E and  $\alpha$ -tocopherol, III, 376.  
 dystrophy of, and motor neurone disease, treatment of, with vitamins-E and -B<sub>6</sub>, III, 211.  
 from codliver oil, prevention of, by  $\alpha$ -tocopherol in rabbits, III, 676.  
 in vitamin-E-deficient mice, III, 515.  
 nutritional, treatment of, with  $\alpha$ -tocopherol in rabbits, III, 737.  
 progressive, oestrogen in urine of boys with, III, 583.  
 ossous atrophy with, III, 105.  
 pseudohypertrophic, treatment of, with vitamin-B<sub>6</sub> in children, III, 671.  
 treatment of, with vitamins, III, 804.  
 dystrophy and shortening of, III, 208.  
 effect on, of denervation in cold-blooded animals, III, 103.  
 of drugs, in crustaceans, III, 880.  
 electrical impedance of, at cut and uncut surfaces, III, 583.  
 energy-yielding substances in, transformation of, III, 105.  
 eserine-like action on, of aliphatic alcohols and ketones, III, 298.  
 extraocular, transposition of, in monkeys, III, 22.  
 facial, of monotremes, homologisation of, with marsupials and placentals, III, 429.  
 fatigue in, Donaggio reaction in, III, 444.  
 fatigued, effect on, of glucose and other agents, in adrenalectomised rats, III, 119.  
 fibres, end plates of, morphological effects of inanition on, III, 803.  
 striated, response of, to intense flashes of ultra-violet light, III, 444.  
 twitching of, III, 103.  
 forearm flexors, in lizards, mammals, and urodeles, III, 565.  
 gastrocnemius, function of, effect of adrenalectomy and fasting on, in rats, III, 229.  
 gemellus superior, absence of, in American whites and negroes, III, 505.  
 glycogen in, after partial hepatectomy, III, 157.  
 glycogen phosphorylation in, after adrenalectomy and restoration, III, 451.  
 effect of adrenals on, III, 583.  
 hepatic vein sphincter, mechanism of, III, 295.  
 hind limb, exchanging nerve connexions in, III, 106.  
 $pH$  of, in overheated dogs, III, 445.  
 impulse initiation of, at neuro-muscular junction, III, 444.  
 intact, effect of decreased temperature on, III, 207.  
 intercostal, motor end-plates of, pathological effects of carbon dioxide and electricity on, III, 583.  
 intestinal, smooth, sensitisation of, to adrenaline, in thyroid-fed dogs, III, 112.  
 intraocular, pharmacology of, III, 589, 840.  
 iris, action on, of strychnine, III, 589.  
 magnesium penetration into, in frogs, III, 444.  
 oesophageal, properties of, III, 240.  
 oxygen consumption by, effect of morphine poisoning on, III, 633.  
 from vitamin-E-deficient animals, effect of  $\alpha$ -tocopherol phosphate on, III, 880.  
 oxygen repayment debt in, in grasshoppers, III, 623.  
 perineal, striated, effect on, of castration and testosterone propionate, in rats, III, 376.  
 phosphorylase of, III, 419.  
 piriformis, relation of sciatic nerve to, in Chinese, III, 361.  
 potassium in, effect on, of calcium, III, 104.  
 of guanidine and prostigmine, III, 548.
- Muscle**, protein, III, 207.  
 solubility of, after adrenalectomy, III, 299.  
 pulp, glycogen degradation in, of warm-blooded animals, III, 104.  
 Pasteur effect in, in warm-blooded animals, III, 104.  
 pyramidal, reflexes of, III, 738.  
 respiration of, citric acid cycle in, in pigeons, III, 475.  
 respiratory, tonus of, in relation to artificial respiration, III, 206.  
 sensitivity of, to acetylcholine, effect of alcohols on, III, 298.  
 skeletal, acetylcholine as transmitter to, III, 803.  
 action potential of, in frogs, III, 737.  
 calcium and magnesium distribution between cells and fluids of, in dogs, III, 462.  
 degenerated, nerve-ending loss in, in vitamin-E-deficient rats, III, 208.  
 denervated, fibrillation and atrophy in, III, 208, 737.  
 disuse atrophy of, III, 103.  
 disuse and denervation effects on, III, 103.  
 effect on, of adrenaline, ephedrine, and prostigmine, III, 804.  
 of strophanthin, III, 104.  
 electrolyte and water exchange between, and plasma, after extracellular electrolyte loss in dog, III, 916.  
 fatigue in, contraction and transmission of, III, 737.  
 fibrillation in, in relation to denervation and inactivation, III, 444.  
 histochemistry of, in relation to age, III, 582.  
 strength and fatiguability of, effect of gelatin feeding on, III, 207.  
 sugar penetration from vascular system into intercellular space in, III, 208.  
 sympathetic influences on, action site of, III, 299.  
 vascular system in, volume of, III, 207.  
 smooth, adrenaline inactivation by, III, 120.  
 nerve-free, of chick's amnion, III, 209.  
 proteins of, in invertebrates, III, 583.  
 resting, mechanical properties of, III, 583.  
 sphincter, pyloric, effect of fats on, III, 30.  
 sphincter of Oddi, effect on, of food in man, III, 528.  
 of magnesium sulphate in man, III, 754.  
 in man and dog, III, 530.  
 spike potential of, endplate potential during and after, III, 444.  
 spinal extensors, reflex activity in, III, 445.  
 stimulation of, serum-choline-esterase activity in, III, 737.  
 strength of, effect on, of glycine, III, 298.  
 striated, heat narcosis of, in frog, III, 805.  
 innervation and tonus of, in man, III, 376.  
 irritability of, effect on, of weight and monoiodoacetic acid poisoning, III, 515.  
 potassium in, effect of calcium on, III, 104.  
 wave mechanics in, III, 507.  
 subordination in, chronaxie of, influence of cerebellum on, III, 805.  
 chronaxie and tone in, III, 804.  
 synergic activity of, during walking in man, III, 299.  
 transplantation of, and nerves, in rat forelimb, III, 881.  
 trapezius, origin of, III, 657.  
 tremor of, orthostatic, III, 804.  
 uterine, electric characteristics and motility of, effect of oestrone on, III, 130.  
 vertebral, human, physiology of, III, 299.  
 weakness in, due to digitalis, III, 482.  
 treatment of, with pyridoxine hydrochloride, III, 583.  
 with double innervation, functions of, during walking in man, III, 299.
- Muscle extracts**, phosphate transfer in, effect of amino-acids on, III, 915.  
**Muscle-nerve junction**. See Nerve-muscle junction.  
**Muscular exercise**, effect of, on salt-water balance in hot climates, III, 170.  
 effect of gelatin on capacity for, III, 338.
- Muscular exercise**, performance of, in relation to blood-lactic acid and pulse rate, III, 485.  
**Museum specimens**, preservation of, in wartime, III, 502.  
**Mushrooms**, extraction of, by fat solvents, III, 425.  
**Musical tones**, combinations of, perception of, III, 592, 743.  
**Musk**, American, II, 178.  
**Muskrat**, Louisiana, musk from, constituents of, II, 178.  
**Mussels**, anaërobiosis in, III, 623.  
 Australian marine. See *Mytilus plantulatus*.  
 edible. See *Mytilus edulis*.  
 See also *Mytilus californianus*.  
**Mustard cake**, poisoning by. See under Poisoning.  
**Mustard gas**, action of, on skin, III, 772.  
 compounds similar to, hydrolysis of, I, 401.  
 eye lesions due to, III, 588.  
 See also Diethyl sulphide,  $\beta\beta'$ -dichloro-.  
**Mustard oil**, from mustard seed and cake, tissue changes in rats fed on, III, 928.  
 toxicity of, III, 928.  
 resembling epidemiologically-incriminated oil, III, 938.  
*Mustela cicognani*, delayed implantation in, III, 790.  
*Mustela frenata*, delayed implantation in, III, 790.  
*Mustelis canis*, diabetogenic hormone in, origin of, III, 230.  
**Mutase**, glycerophosphate, II, 185.  
**Mutism**, akinetic, with epidermoid cyst of 3rd ventricle, III, 302.  
**Myasthenia gravis**, III, 515.  
 action of prostigmine on serum-choline-esterase in, III, 881.  
 associated with thymoma, III, 105.  
 goitre with, III, 515.  
 potassium in, III, 583.  
 respiration in, III, 671.  
 treatment of, and relation to thymus, III, 804.  
 by thymectomy, III, 671.  
 with ephedrine, III, 881.  
 with guanidine hydrochloride, III, 208.  
**Myatonia congenita**, III, 675.  
**Mycobacteria**, benzoic acid oxidation by, III, 648.  
*Mycobacterium phlei*, carotenoids of, III, 176.  
*Mycobacterium tuberculosis*, cultivation of, in minced chick embryo, III, 855.  
 fluorescence microscopy of, III, 855.  
**Mydriatics**, III, 448.  
 synthetic, II, 224, 237.  
**Myelin**, staining of, in traumatic neuromas and injured nerves, III, 660.  
**Myelogenesis**, in spinal cord, III, 107.  
**Myelomas**, multiple, diagnosis of, by sternal aspiration, III, 826.  
 regression of, and their metastatic growths, III, 401.  
**Myelomatosis**, renal tubule obstruction in, III, 320.  
**Myeloscopia**, III, 672.  
**Myocardial disease**. See Myocarditis and under Muscle, cardiac.  
**Myocarditis**, III, 203, 441.  
 interstitial, after sulphonamide drug dosage, III, 371.  
 produced by sulphonamides in mice and rats, III, 480.  
**Myocardium**. See Muscle, cardiac.  
**Myoglobin**, mixtures of, with metmyoglobin, oxidation-reduction potentials of, III, 736.  
**Myogram**, in disseminated sclerosis, III, 213.  
**Myohæmoglobinuria**, III, 321.  
**Myokinase**, enzymic action of, III, 641.  
**Myoma uteri**, arginase and histidase in, III, 235.  
**Myometrial gland**. See under Glands.  
**Myopathy**, congenital, myotonia congenita in relation to, III, 208.  
**Myopia**, III, 678.  
 muscle imbalance in, III, 677.  
 progressive, pathologic, treatment of, III, 221.



**Myosin**, adenosinetriphosphatase activity of preparations of, III, 642.  
birefringence of, effect on, of adenylyl pyrophosphate, III, 207.  
muscle-protein, electron-microscopic study of, I, 297.  
structure of, I, 231.  
**Myositis**, epidemic, with neuritis, erythema, and meningeal symptoms, III, 444.  
**Myositis ossificans progressiva**, III, 299.  
**Myotonia**, phenomena of, III, 208.  
**Myotonia congenita**, congenital myopathy in relation to, III, 208.  
**Myricetin** 3:7:3':4':5'-*pentaacetate*, II, 149.  
**Myrist-p-aminoanilide**, II, 405.  
**Myrsine capitellata**, active principles of, III, 787.  
**Myrsine semiserrata**, active principles of, III, 787.  
**Mysoreans**, vital capacity of, III, 146.  
**Mytilus californianus**, distribution of, in relation to salinity of environment, III, 323.  
tissue-chloride in, III, 612.  
**Mytilus edulis**, shell movements of, in relation to temperature, III, 899.  
**Mytilus planulatus**, sterol fraction of, III, 695.  
**Myxœdema**, capillaries in, III, 26.  
carotinemia in, III, 743.  
circulatory apparatus in, III, 887.  
disturbed calcium metabolism in, III, 305.  
heart in, III, 115.  
infantile, umbilical hernia of, III, 381.  
peripheral blood flow in, III, 743.  
production of, by thiocyanates, III, 887.  
spontaneous, with cardiac symptoms, III, 117.  
treatment of, with thyroxine, III, 744.  
**Myxoma**, infectious, and fibroma viruses, antigenic relation between, in rabbits, III, 324.  
of heart, III, 467.

N.

**Nadorite**, structure of, X-ray, I, 355.  
**Nagler reaction**, III, 557.  
**Nails**, determination in, of arsenic, III, 280.  
human, dystrophy of, hereditary, III, 186.  
Mail polish. See under Lacquers.  
**Names**, native, of Siberian peoples, III, 189.  
**Napelline**, and its derivatives, III, 336.  
**N-1-Naphthacyl-3:4-dihydroxyphenylethylamine**, N-4-hydroxy-, picrate, II, 57.  
**Naphthaldehydes**, II, 97.  
1-Naphthaldehyde, derivatives of, II, 97.  
1-Naphthaldehyde, 5-bromo-, derivatives of, II, 97.  
5-bromo-8-nitro-, and its derivatives, II, 98.  
**Naphthalene**, crystals, conical refraction in, I, 47, 231.  
structure of, I, 87.  
invert soaps of, II, 137.  
oxidation of, catalytic, and its derivatives, II, 220.  
spectrum of, Raman, I, 314.  
structure of, II, 253.  
vapour pressure curve of, up to critical point, I, 167.  
**Naphthalene**, 2-bromo-, preparation of, II, 85.  
bromo-1:5-dihydroxy-, and 1:5-dithiol-, decamethylene ethers, II, 195.  
chloro-derivatives, toxicity of, in industry, III, 485.  
1-nitro-, derivatives, reduction of, II, 139.  
f.p. of mixtures of diphenylamine with, I, 294.  
**Naphthaleneazo-β-naphthyl acetate**, 5-nitro-, II, 139.  
1-(1'-Naphthaleneazo)-2-naphthyl chloroacetate, and its pyridinium salt, I, 356.  
2-Naphthalene-5'-chloro-4'-7'-dimethyl-2'-indoleindigotin, 4-chloro-, II, 204.  
2-Naphthalene-4':5'-dichloro-7-methoxy-2'-indoleindigotin, 4-chloro-, II, 204.  
2-Naphthalene-5'-chloro-7'-methoxy-4'-methyl-2'-indoleindigotin, 4-bromo-, and 4-chloro-, II, 203.  
2-Naphthalene-5:7-dichloro-4'-methyl-2'-indoleindigotin, 4-chloro-, II, 204.

**Naphthalenedisulphonanilides**, chloro-, II, 170.  
**Naphthalenesulphinic acids**, copper and nickel salts, II, 226.  
**Naphthalenesulphonamide**, 4-amino-, II, 375.  
**Naphthalenesulphonic acids**, copper and nickel salts, II, 226.  
**Naphthalene-3:6:8-trisulphonanilide**, 1-chloro-, II, 170.  
2:3-Naphthalic acid, 1:4-dihydroxy-, diethylester, II, 259.  
**Naphthalyl chloride**, isomerisation of, II, 142.  
3-Naphthyl-*m*-aminoanilide, 2-hydroxy-, and its derivatives, II, 405.  
**α-Naphthaquinols**, pigments from, II, 110.  
**Naphthaquinone**, water-soluble, prothrombin response to administration of, III, 194.  
1:4-Naphthaquinone, 2-bromo-5-hydroxy-, 5-acetyl derivative, II, 255.  
**β-Naphthaquinonesulphonic acid**, spectrum of, absorption, I, 81.  
**Naphtha(1':2':4:5)thiazole**, 2:4'-dichloro-, II, 275.  
**Naphthaisotriazine group**, II, 427.  
**isoNaphthazarin**, synthesis of, II, 364.  
3-Naphthdodecamidoanilides, 2-hydroxy-, II, 405.  
**periNaphthene series**, II, 21.  
**Naphthenic acid**, II, 227.  
**tert-Naphthenic acids**, characterisation and synthesis of, II, 141.  
**periNaphthen-7-one**, 6-hydroxy-, II, 21.  
3-Naphthmyristamidoanilides, 2-hydroxy-, II, 405.  
**α-Naphthoic acid**, β-piperidinoethyl ester, hydrochloride, II, 237.  
**β-Naphthoic acid**, 1-hydroxy-, reaction of, with thionyl chloride, II, 281.  
**Naphthoic acids**, compounds of, with their copper and nickel salts, II, 226.  
**Naphthoic acids**, aminohydroxy-, II, 226.  
**α-Naphthol**, 2:4- and 2:6-dibromo-5-hydroxy-, and their acetyl derivatives, II, 255.  
5-hydroxy-, and its 1:5-diacyl derivative, bromination of, II, 255.  
4-nitro-, benzoate, II, 337.  
**β-Naphthol**, Nencki reaction with, II, 176.  
reaction of, with thionyl chloride, II, 281.  
**Naphthols**, derivatives, anæsthetic activity of. See under Anæsthetics.  
reaction of, with sulphuryl chloride, II, 282.  
**Naphthol AS series**, II, 312, 405.  
3-Naphthol-*m*-oleamidoanilide, 2-hydroxy-, II, 405.  
**α-Naphtho-4-propyl-α-pyrone**, II, 375.  
4-3'-Naphthylaminocetophenone, 4-2'-hydroxy-, II, 312.  
*m*- and *p*-3'-Naphthylaminobenzenanilides, *m*- and *p*-2'-hydroxy-, II, 312.  
*p*-3'-Naphthylaminobenzoic acid, *p*-2'-hydroxy-, II, 312.  
4-3'-Naphthylaminobenzophenone, 4-2'-hydroxy-, II, 312.  
8-3'-Naphthylamino-1-naphthylamine, 8-2'-hydroxy-, II, 312.  
2-3'-Naphthylaminothiazole, 2:2'-hydroxy-, II, 312.  
**α-Naphthylcarbinol** 2:4-dinitrophenylhydrazones, II, 18.  
3-Naphthoyl-*m*-phenylenediamine, 2-hydroxy-, and its *N*'-benzoyl derivative, II, 312.  
3-Naphthpalmitamidoanilides, 2-hydroxy-, II, 405.  
3-Naphthstearamidoanilides, 2-hydroxy-, II, 405.  
**Naphthyl ethers**, germicidal activity of, III, 421.  
methyl ethers, condensation of, with maleic anhydride, II, 261.  
**α-Naphthyl α-bromo-*n*-decyl sulphide**, 5-thiol-, II, 195.  
ethyl ether, 4-nitro-, reaction of, with sodium methoxide, II, 139.  
methyl ether, 4-nitro-, reaction of, with sodium ethoxide, II, 139.  
**β-Naphthyl alkyl ethers**, II, 193.  
1-Naphthylacrylic acid, 5-bromo-, and 5-bromo-8-nitro-, II, 98.  
5-bromo-8-nitro-, and its derivatives, II, 98.  
**α-Naphthylamine**, complexes of, with metallic thiocyanates, I, 340.  
equilibrium of, with *p*-dinitrobenzene, I, 398.

**β-Naphthylamine**, metabolism of. See under Metabolism.  
**β-Naphthyl β-9-anthranylviny ketone**, II, 284.  
1-Naphthylarsenoxide, 2-amino-, acetyl derivative, II, 337.  
2-Naphthylarsenoxide, II, 337.  
1-Naphthylarsinic acid, 4-hydroxy-, II, 337.  
**β-2-Naphthyl-Δ<sup>αβ</sup>-butenolide**, β-6-hydroxy-, II, 406.  
**Naphthyl α-*n*-butyl-*n*-nonadecyl ketone**, II, 85.  
**α-1-Naphthylisobutyric acid**, II, 140.  
**dl-β-1-α-Naphthylcarbonyl-2-piperidylpropaldehyde diethylacetal**, II, 38.  
**α-Naphthyl-γ-diethylaminopropylcarbinol**, and its hydrochloride, II, 193.  
**β-Naphthyl β-dimethylaminoethyl ketone**, hydrochloride, II, 224.  
**β-Naphthyl dimethylcetyl ammonium iodide**, II, 137.  
**N-β-1-Naphthylethyl-N-homoveratrylbenzenesulphonamide**, II, 58.  
2-Naphthyl ethyl ketone, 6-hydroxy-, II, 223.  
**β-1-Naphthylethylphthalimide**, II, 57.  
**α-Naphthylglycollic acid**, β-piperidinoethyl ester, hydrochloride, II, 237.  
**Naphthyl *n*-heneicosyl ketone**, II, 85.  
**α-Naphthyl-*n*-hexacosane**, II, 85.  
**α-Naphthyl-Δ<sup>α</sup>-*n*-hexacosene**, II, 85.  
1-α-Naphthylcyclohexan-1-ol, II, 89.  
**α-Naphthyliminocamphor**, 4-hydroxy-, magnetic susceptibility and rotation of, II, 60.  
2-1-Naphthylisatogen, 6-nitro-, and its derivatives, II, 98.  
**β-Naphthylmethyl-di-*n*-butyl ammonium iodide**, II, 137.  
2-(Naphthyl-1'-methyl)iminazoline hydrochloride. See Ciba.  
**β-Naphthylphthalic acid**, II, 361.  
**β-Naphthyl β-piperidinoethyl ketone** hydrochloride, II, 225.  
**α-2-Naphthyl-*n*-propyl alcohol**, II, 223.  
1-Naphthyl 6'-1:2:3:4-tetrahydronaphthyl ketone, and its oxime, II, 7.  
**Naphthyltetramethyldiaminodiphenylmethane**, bromo-, II, 98.  
2-(β-Naphthylthio)benzaldehyde, 4-nitro-, II, 63.  
**α-Naphthylthiocarbimide**, 4-chloro-, II, 275.  
1-Naphthylthioglycollic acid, 2-amino-, acetyl derivative, and 2-chloro-, II, 333.  
**β-Naphthyltrimethyl ammonium methosulphate**, II, 137.  
**Narcosis**, after exposure to carbon tetrachloride, III, 260.  
**Narcotics**, action of, on intestine, III, 842.  
biological effects of, III, 555.  
biurets containing piperidine, III, 710.  
magnesium chloride, III, 770.  
4-Naringenin glucoside, II, 352.  
**Naso-palpebral reflex**, physiopathological and clinical significance of, III, 300.  
**Nebal BX**, solutions, spreading coefficients of, I, 95.  
**Nebulae**, extragalactic, Reynolds' number for, I, 224.  
gaseous, physical processes in, I, 222, 253.  
planetary, high-excitation, spectra of, I, 253.  
**Necrobiosis lipidica**, and granuloma annulare, III, 474.  
**Nectar**, concentration of, in relation to fire-blight infection, III, 645.  
sugar concentration in, III, 181.  
**Necturus**, brain, fibres of, optic and postoptic systems of, III, 682.  
**Necturus maculosus**, gonads and hypophysis of, cyclical changes in, III, 747.  
**Needles**, vibrating, for transplantations, III, 182.  
**Neem oil**, bitter principles of, II, 123.  
**Ne-oes**, American, arteries of, and of whites, III, 361.  
physical anthropology of, III, 659.  
rickets in, III, 763.  
**Neisseria gonorrhœa**, growth of, on vitamin-B<sub>1</sub>-containing media, III, 940.  
**Nembutal**, anæsthesia with. See under Anæsthesia.  
**Nencki reaction**, II, 176.  
**Neosarphenamine**. See Neosalvarsan.  
**Neocinchophen**, III, 484.

- Neocoton dyes, II, 196.
- Neodymium, spectrum of, absorption, in its bromate, I, 386.  
spark, Zeeman effect in, I, 221.
- Neodymium trifluoride, m.p. of, I, 321.  
hydroxide, sols, I, 237.
- Neodymium separation:—  
separation of, from gadolinium and samarium, I, 373.
- Neolinarin, II, 303.
- Neon, brain stem irradiation with, effect of, III, 219.  
isotopes of, preparation of, I, 152.
- Neon light, heliotropic effect of, III, 774.
- Neoplasm, III, 249.  
benignancy of, artificial, III, 403.  
failure of 1-o-tolueneazo-2-naphthylamine to produce, III, 902.  
of central nervous system and its membranes, heredity of, III, 467.  
transplanted, effect of sex hormones on, III, 324.
- Neoplastic disease. See under Diseases.
- Neosalvarsan, colloid and crystalloid fractions of, distribution and retention of, III, 634.  
encephalopathy after, III, 843.  
toxicity of, in rabbits, III, 634.  
treatment with, of bacterial infections, III, 770.  
of cutaneous anthrax, III, 411.  
of syphilis during pregnancy, encephalitis from, III, 925.
- Neosynephrin, cardio-circulatory effect of, in man, III, 548.  
effects of, on anaesthetised dog, III, 337.
- Neotoca bilineata, germ cells in, III, 567.  
reproductive cycle of, III, 125, 232.
- Nepela calaria, oil from, constituents of, II, 124.
- Nepetalic acid, constitution of, and its derivatives, II, 124.
- Nepetalinic acid, constitution of, II, 124.
- Nepetic acid, constitution of, and its derivatives, II, 124.
- Nepetonic acid, constitution of, and its derivatives, II, 124.
- Nepheline, I, 252.
- Nephrectomy, blood pressure, renal blood flow, and glomerular filtration rate changes of hypertensive cases after, III, 461.  
role of, in hypertension, III, 514.  
survival time of pregnant and non-pregnant rats after, III, 820.
- Nephritis, anaemia in, III, 509.  
experimental, III, 898.  
hyperparathyroidism in, III, 595.  
glomerular, treatment of, with sulphanilamide, III, 479.  
hemorrhagic, prognosis of, in childhood, III, 694.  
induction of, by antikidney serum injection in rats, III, 610.  
natural history of, III, 694.  
serum-protein regeneration after amino-acid use in, III, 9.
- Nephrolithiasis in hyperparathyroidism, III, 887.
- Nephron, proximal tubule of, iron-containing pigment and segmental differentiation in, in rats, III, 660.
- Nephrosis, age and diet in relation to, in rats, III, 320.  
amyloid, urinary proteins in, III, 145.  
lipoid, III, 245.  
terminating in chronic glomerulonephritis, III, 320.  
mercurial injections in, toxicity of, III, 551.  
treatment of, with acacia, III, 461.
- Nerves, action potentials of, apparatus for recording, III, 515.  
activation mechanism of, III, 300.  
activity of, and choline-esterase concentration, electrical changes during, III, 445.  
apparatus for recording, III, 210.  
electrical, characteristics of, III, 299.  
adrenergic stimulation of, in relation to intestinal muscle of thyroid-fed dogs, III, 112.  
after-discharge in, production of, by veratrine, III, 445.
- Nerves, axons, impregnation of, in paraffin sections, III, 434.  
intraspinous, excitation of, by impulses in adjacent axons, III, 299.  
bladder, control of, III, 676.  
frog and turtle, III, 300.  
block of, therapeutic, III, 516.  
blood supply of, III, 741.  
cells, number per unit volume of tissue, III, 109.  
structure of, in area striata in cats, III, 109.  
concussion of, III, 445.  
crossing of, to antagonistic leg muscles, effect of, III, 106.  
crossing and regeneration of, reflex effects of, III, 106.  
degeneration of, in thiamin deficiency in birds, III, 673.  
dorsal root potential of, restoration of, by strychnine, after abolition by spinal cord section, III, 673.  
dorsal root reflexes of, effect of painful lesions on, in dogs, III, 445.  
endings of, adjustments of, III, 881.  
associated with mouse knee joint, III, 804.  
endometrium, human, III, 209.  
fatigue and refractoriness in, III, 515.  
fibres, argyrophilia of, differences in, III, 741.  
choline-esterase in, localisation of, III, 209.  
distribution of response times in, III, 445.  
electrical rectification of, III, 376.  
enzymes in, localisation of, III, 672.  
excitability of, effect of sub-threshold stimuli on, III, 672.  
extension of, into denervated areas of skin, III, 737.  
interaction between, III, 445.  
medullated, interaction of, tested with electric shocks, III, 209.  
subconducted process in, III, 299.  
network of, steady-state activity in, III, 445.  
preganglionic, spinal origin of, to limbs in cat and monkey, III, 516.  
sheaths, optical properties of, in shrimps, III, 105.  
staining of, III, 190.  
flexor reflex in, crossed inhibition of, in spinal mammal, III, 446.  
fourth, development of, in chick embryo, III, 209.  
grafted, degeneration and re-innervation of, III, 105.  
lesions of, due to uleron, III, 219.  
lingual-maxillary, reflex of, effect of circulatory changes on, III, 446.  
living, III, 737.  
motor, pleomorphism of plates of, in relation to protoplasmic movement, III, 286.  
transplantation of, and muscles, in rat forelimb, III, 881.  
myelinated bundles of, of pial and spinal cord blood vessels, III, 672.  
olfactory, atrophy of, in man, III, 227.  
development of, in man, III, 683.  
optic, aplasia of, III, 25.  
atrophy of, due to methyl alcohol, cupping of nerve head in, III, 25.  
cut, pupillary function recovery in, III, 222.  
development of, in chick embryo, III, 449.  
discharge of, in cat and rabbit, III, 591.  
fibres, number of, and eye ball size, III, 886.  
termination of, in geniculate body of rabbits, III, 516.  
head of, characteristics of, III, 591.  
lesions of, in vitamin-B<sub>12</sub> deficiency, III, 682.  
tumours of, III, 115, 591.  
peripheral, effect on, of X-rays, III, 930.  
in nutritional deficiency, III, 210.  
lesions of, sweat secretion disturbances after, III, 586.  
medullated fibres of, calibre and number of, III, 106.  
structure of, III, 881.  
petrosal, superficial, destruction of, and ovulation in rabbits, III, 448.  
phrenic, crossed phenomena of, effect of drugs on, III, 16.
- Nerves, potassium and water changes in, on stimulation, III, 515.  
regeneration of, III, 672.  
resting potential of, effect of metabolic inhibitors on, in frogs, III, 445.  
stabilisation of, by calcium, III, 672.  
reunion of ends of, by tubulation, III, 105.  
roots, sensory pain of, III, 672.  
structure of, III, 881.  
surgical lesions of, III, 738.  
sciatic, in relation to piriformis muscle in Chinese, III, 361.  
phospholipin formation in, III, 738.  
sheaths, tumours of, in fish of snapper family, III, 824.  
spinal, roots, lesions of, skin temperature regulation after, III, 377.  
medullated fibres in, III, 106.  
splanchnic, effect of section of, on biliary tract, III, 32.  
myelination of, in cats, III, 112.  
stimulation of, electrical, III, 584.  
supply of, to bovine mammary glands, III, 516.  
suture of, autologous plasma clot, III, 672.  
sympathetic, block of, with novocaine, in rehabilitation of extremities after injury, III, 516.  
humoral transmission of, action of, effect of amines and cocaine on, III, 922.  
thoracic, first, pre-ganglionic components of, and their rôle in sympathetic innervation of upper extremity, III, 676.  
tissues of, growth stimulation of, with biotin, III, 804.  
study of, by X-ray diffraction and petrographic microscope, III, 804.  
tumours of, benign and encapsulated, III, 536.  
vago-sympathetic, action of brain extracts after stimulation of, on frog's heart, III, 300.  
vertebral canal, relation of, to sympathetic innervation of upper extremities, III, 111.  
visceral, activity of, III, 220.
- Nerve centres, action on, of vitamins, III, 907.  
autonomic and somatic, excitability differences of, in response to anoxia, III, 735.  
higher, co-ordinating action of, on muscular functions of invertebrates, III, 301.  
motor, in circulatory insufficiency, III, 300.
- Nerve-muscle chronaxie, in injuries after tri-ethyl phosphate poisoning, III, 299.
- Nerve-muscle junction, III, 298.  
abortive impulses at, III, 208.  
electric potential changes at, III, 583.
- Nervi nervorum, in intracranial passage of rats, III, 516.
- Nervous disease. See under Diseases.
- Nervous system, anaesthesia and c.m.f. of, III, 376.  
antero-lateral ascending tracts in, bulbar termination of, with reference to spino-juxtascotary tract, III, 107.  
autonomic, caffeine as synaptic poison to, III, 303.  
hypersensitivity of, and allergic diatheses, III, 303.  
neurosection of, morphology of, III, 220.  
spinal, outflows in, in man and monkey, III, 112.  
central, acetylcholine and choline-esterase in, in insects, III, 584.  
action on, of acetylcholine, eserine, and prostigmine, intrathecally injected, in man, III, 882.  
of thiophen, III, 19.  
activity of, III, 107.  
amino-oxidase and choline-esterase in, in man, III, 518.  
demyelination of, III, 107.  
diagnosis of virus infections of, III, 855.  
ear and, III, 303.  
effect of drugs on, in insects, III, 107.  
effect of insulin on, III, 302.  
hemangiomas of, III, 467.  
lesions in, histopathology of, III, 17.  
morphogenesis of, effect of tetanus toxin on, in chicks, III, 659.  
of goldfish, effect on, of X-rays in water, III, 672, 930.

- Nervous system, central, tumours of, histology of, III, 219.**  
 vitamin-C in, histochemistry of, III, 805.  
 central and peripheral, deficiency syndrome and diffuse inflammation of, III, 378.  
 excitability of, in asthenic toads, III, 107.  
 convulsive discharges in, III, 301.  
 disturbances in, and epilepsy, III, 301.  
 effect on, of vitamin-A deficiency, III, 212.  
 industrial poisons and, III, 301.  
 neoplasms of, and its membranes, heredity of, III, 467.  
 peripheral, structure of, and its restitution in rabbits, II, 299.  
 poliomyelitis virus dissemination in, III, 217.  
 sympathetic, cervical, structure of, in cats, III, 586.  
 dysfunction of, with postural hypotension, III, 580.  
 functional responses of, after hemidecortication in man, III, 586.  
 in neurogenic and renal hypertension, III, 100.  
 neural pathways in, in relation to sympathio denervation of upper extremity, III, 378.  
 vegetative, disturbances in, III, 216.  
 effect on, of visible light, III, 219.
- Nervous tension, treatment of states of, with progesterone, III, 526.**
- Nervus terminalis and its ganglion, III, 111.**
- Nessler's reagent, decomposition of, I, 182.**  
 mercuric oxide in, I, 182.
- Nets, for catching rodents in laboratory, III, 183.**
- Neural crest, origin of, III, 790.**
- Neuralgia, hypogastric, treatment of, by infiltration, III, 925.**  
 trigeminal, after prophylaxis, with tetanus antitoxin, III, 560.  
 vasodilators in, III, 300.
- Neurilemmoma, orbital, III, 591.**
- Neurinoma, basic substance of, III, 219.**
- Neuritis, diabetic, of lower extremities, arterio-sclerosis in relation to, III, 580.**  
 hypertrophic, familial, algic form of, III, 210.  
 peripheral, after sulphamethylthiazole treatment of endocarditis, III, 480.  
 treatment of, with yeast- and muscle-adenylic acid in malnutrition, III, 539.  
 peripheral and retrobulbar, due to vitamin-B complex deficiency, in chronic alcoholic and pipe smoker, III, 304.
- Neurodermatitis, magnesium content of skin in, III, 333.**
- Neurofibromas of ears. See under Ears.**
- Neuro-humoral activation, complementary action of eserine and acid in, III, 676.**
- Neurohypophysis. See Neuropituitary.**
- Neurology, effect of excitatory amino-compounds in, III, 883.**
- Neuromuscular diseases. See under Diseases.**
- Neurones, activity of, steady potential fields and, III, 446.**  
 differentiation of, in implanted foetal cortical tissue, III, 584.  
 motor, disease of, and muscular dystrophy, treatment of, with vitamins-E and -B<sub>6</sub>, III, 211.  
 phrenic, excitation and inhibition of, III, 584.  
 upper, lesions of, in sclerosis, III, 378.  
 pre- and post-ganglionic, ratio of, III, 112.  
 proliferation of, effect on, of pituitary hormone, III, 214.  
 respiration of, III, 738.  
 rôle of, in dissemination of poliomyelitis virus in nervous system, III, 217.  
 sensory, degeneration of, from dietary deficiencies, prevention of, III, 379.  
 synchronisation of, physiology, pathology, and mechanism of, III, 300.
- Neuropathy, peripheral, fibre dissociation in, III, 516.**
- Neuropituitary, microglia existence in, III, 84.**  
 relation of, to gastric secretion, III, 815.  
 structure of, with reference to nerve endings, III, 868.
- Neuropsychiatric diseases. See under Diseases.**
- Neuropsychiatry, review of, for 1941, III, 517.**
- Neurosis, cardiac, heart disease and, III, 96.**
- Neurospora, biochemical reactions with, III, 267.**  
 genetic control of, III, 938.
- Neurosphilis, fever therapy in, III, 884.**  
 intraspinal therapy in, III, 711.  
 juvenile, treatment of, with artificial fever therapy, III, 713.
- Neutrino, detection of, I, 163.**  
 existence of, I, 311.  
 mass of, I, 223.
- Neutrons, bactericidal action of, III, 262.**  
 beams, depolarisation of, by magnetic fields, I, 223.  
 fast, applications of, in biological chemistry, III, 713.  
 scattering of, I, 223.  
 by lead, I, 127.  
 interaction of, with protons, I, 382.  
 life of, in water, and their hydrogen capture cross-section, I, 223.  
 low-energy, slowing down of, in water, I, 127.  
 production of, by cosmic rays at 14,125 feet, I, 287.  
 resonance absorption of, in antimony, gold, and rhodium, I, 286.  
 scattering by, of protons, I, 286.  
 scattering of, by crystals, I, 382.  
 by deuterons, I, 128.  
 in helium, I, 223.  
 magnetic, I, 162.  
 slow, apparatus for measuring velocity of, I, 158.  
 capture of, and  $\gamma$ -ray emission, I, 32.  
 interaction of, with nuclei, I, 128.  
 scattering of, I, 32.  
 treatment with, of cancer, III, 616.  
 source for, I, 378.  
 use of, in chemical and biological research, I, 286.  
 yield of, from deuterons on carbon, I, 382.
- Neutropenia, malignant, after sulphapyridine treatment, III, 480.**
- Newborn, sweat excretion in, III, 34.**  
 vitamin-K requirement of, III, 9.
- Newcastle disease, virus, affinity of, to influenza virus, III, 856.**
- Nickel, catalytic, Raney, decomposition of ozonides with, II, 131.**  
 reduction of esters with, II, 129.  
 catalytic action of, in formation of methane and heavy gases, I, 244.  
 dia- and para-magnetic complexes of, spectra of, absorption, I, 131.  
 $\Delta E$  effect of, I, 88.  
 equilibrium of, with its oxide and aluminium and carbon oxides, I, 240.  
 films, spectrum of, absorption, at low temperatures, I, 132.  
 ions, complex, vibrational structure of, I, 225.  
 with dithio-oxalate and glycine, I, 398.  
 diffusion and hydration of, in solution, I, 366.  
 solubility of, in aqueous alkaline carbonate-tungstate solutions, I, 170.  
 isotopes of, I, 255.  
 radioactive, I, 286.  
 magnetism of, effect of ultrasonic waves on, I, 320.  
 $\gamma$ -rays from, I, 128.  
 spectrum of, Zeeman effect in, I, 221; II, 309.  
 thermal expansion of, I, 50.
- Nickel alloys, with aluminium and cobalt, I, 395.**  
 with aluminium and iron,  $\alpha'$  phase in, I, 169.  
 with aluminium and iron and with aluminium and silicon, I, 323.  
 with antimony,  $\alpha$ -phase of, I, 92.  
 with antimony and copper, I, 93.  
 with chromium, transformations and mass effect in, I, 93.  
 with chromium and iron, phases of, I, 93.  
 with cobalt, magneto-resistance effect in, I, 92.  
 with cobalt and iron, constitution of, I, 18.  
 with iron, magnetisation of single crystals of, I, 87.  
 $\Delta T$  transformation of, I, 93.  
 with iron and titanium, precipitation of, from solid solution, I, 395.
- Nickel salts, reduction of, in liquid ammonia solution, I, 153.**
- Nickel aluminate, I, 211.**  
 ferrite, formation of, I, 276.  
 hydrides, I, 210.  
 nitrate hexammoniate, crystal structure of, I, 390.  
 heat capacity of, I, 232.  
 sulphate, magnetic rotatory power of, I, 47.  
 velocity of hydration and dehydration of, I, 174.
- Nickel organic compounds, complex, with diethylenetriamine, I, 245.**
- Nickel carbonyl, I, 337.**  
 cyanides, complex, reduction of, I, 306.  
 diguanidines, I, 111.  
 disalicylaldehyde, magnetic susceptibility of, I, 137.  
 phenyldiguanidines, and their salts, II, 254.
- Nickel detection and determination:—**  
 detection of, I, 340.  
 with oxanilic acid thioamide, I, 184.  
 determination of, colorimetrically, with ammonia, I, 279.
- Nickel ores, Dillon Nickel Prospect, S.W. Montana, I, 346.**
- Nicotiana rustica, nicotine yield and size of hybrids of, III, 949.**
- Nicotiana tabacum. See Tobacco plants.**
- Nicotinamide, content of, in vegetables, III, 762.**  
 in human foetus, III, 831.  
 in human milk, III, 815, 831.
- Nicotine, azetropism of, in mixtures with water, I, 358; II, 182.**  
 determination of, as silicotungstate, II, 340.  
 effect of, on adrenaline production and blood-sugar level in dogs, III, 411.  
 hydrogenation of, II, 384.  
 ignition and inflammability of, in air, I, 332.  
 toxicity of, effect of adrenaline on, III, 484.  
 treatment with, in mixtures with copper, of parasitic gastritis in lambs, III, 631.
- Nicotinedihydrometanicotinamide, II, 384.**
- Nicotinethylamide, II, 288.**
- Nicotinic acid, action of, on blood coagulation, III, 8, 90.**  
 on glucose fermentation by colon-typhoid bacteria, III, 66.  
 and its amide as growth factors for micro-organisms, III, 61.  
 as growth factor for bacteria, III, 60.  
 content of, in animal tissues, III, 40.  
 in fish, III, 701.  
 deficiency of, fluorescent substance excretion in urine in, III, 832.  
 in dogs, III, 910.  
 test for, in man, III, 910.  
 determination of, effect of *p*-aminobenzoic acid on, III, 832.  
 photo-electrically, III, 254.  
 determination and extraction of, from animal and plant tissues, III, 832.  
 in blood, III, 875.  
 in tissues of normal and blacktongue dogs, III, 831.  
 metabolism of. See under Metabolism.  
 polarography of, and its derivatives, II, 340.  
 requirement of, for pellagra prevention in man, III, 910.  
 stability of, and its urinary excretion, III, 910.  
 synthesis of, by rats, III, 329.
- Nicotinoylbenzenesulphonhydrazide, II, 422.**
- Nicotinyl chloride, 2-amino-, II, 113.**
- Niemann-Pick disease, identity of amaurotic idiocy of Tay-Sachs with, III, 886.**
- Nigeria, Dakarkari peoples of Sokoto province in, III, 792.**
- Niobium, polycrystalline, electrical resistance of, I, 13.**
- Niobium pentachloride, electrical conductivity of, mixed with sodium chloride, I, 368.**  
 hydride, superconduction of, I, 320.  
 nitride, superconduction of, I, 320.  
 phosphides, I, 329.  
 disilicide, crystal structure of, I, 390.
- Niobium detection and determination:—**  
 detection of, I, 279.  
 determination of, in presence of iron, titanium, and vanadium, I, 307.  
 oxidimetrically, I, 410.

- Niobium ores**, containing tantalum, of W. Australia, I, 122.
- Nippostrongylus muris**, immunity to, of rats, effect of splenectomy on, III, 561.
- Nitella**, protoplasm, ionic equilibria in, III, 263.
- Nitella flexilis**, cyclosis and stimulation in, III, 859.
- Nitramide**, base-catalysed decomposition of, in aqueous solutions, I, 176.
- Nitrates**. See under Nitrogen.
- Nitric acid**. See under Nitrogen.
- Nitric oxide**. See Nitrogen dioxide.
- Nitriles**, aliphatic, preparation of, by degradation of acids, II, 217.
- condensation of, with alkyl carbonates, II, 246.
- identification of, II, 124.
- synthesis of, Rosenmund-von Braun, II, 95.
- Nitriolacetic acid**, complex compounds of, I, 405.
- Nitrites**. See under Nitrogen.
- Nitro-alcohols**, II, 295.
- Nitroamines**, II, 306.
- Nitro-compounds**, aliphatic, utilisation of, II, 295, 389.
- aromatic, reaction of, with alkali diphenyl-amides, II, 169.
- spectra of, Raman, I, 288.
- organic, determination of, I, 279.
- reduction of, II, 281.
- spectra of, absorption, in liquid ammonia and liquid sulphur dioxide, I, 82.
- polyNitro-compounds**, reduction of, II, 281.
- Nitrogen**, active, I, 370.
- afterglow of, I, 313.
- adsorption of, low-temperature, by aluminium oxide, I, 55.
- on glass plates, I, 170.
- on iron catalysts for ammonia decomposition, I, 302.
- atoms, scattering of fast electrons by nuclei of, I, 161.
- b.p. and dew point of, mixed with carbon monoxide, I, 358.
- breakdown potentials in, I, 8.
- combined and gaseous, exchange reaction between, I, 26, 110.
- compressibility of mixtures of, with hydrogen and carbon dioxide, I, 90.
- cool-flame propagation in mixtures of oxygen and, in presence of carbon disulphide, I, 101.
- electric discharge in, glow, I, 31.
- electric discharge in mixtures of, with oxygen, I, 371.
- with oxygen and water vapour, I, 403.
- elimination of, during oxygen breathing, influence of body size on, III, 375.
- fixation of, biochemically, III, 421, 424, 780.
- with electric arc, I, 303.
- inhalation of, treatment by, of schizophrenia, III, 884.
- isotope 13, spectrum of,  $\beta$ -ray, I, 223.
- isotope 15, vapour pressure and heat of vaporisation of, I, 50.
- isotopic weights of, I, 127.
- solubility of, mixed with hydrogen, in liquid carbon dioxide, I, 235.
- nomograph for, in liquid ammonia, I, 54.
- spectrum of, I, 190.
- band, I, 131, 351.
- thermodynamic properties of, at high pressures, I, 139.
- Nitrogen compounds**, dietary, interaction of blood-proteins with, in rats, III, 914.
- effect of, on man under high pressure, III, 514.
- intake of, effect of casein digest on, III, 618.
- retention of, in relation to calcium and phosphorus retention, III, 326.
- in relation to growth and osseous development, III, 45.
- storage of, produced by pituitary extracts, effect of adrenals and pancreas on, III, 747.
- Nitrogen bromide**, I, 274.
- monoxide (*nitrous oxide*), specific heat of, I, 232.
- structure of, I, 290.
- thermal decomposition of, I, 302.
- triple-point pressure of, I, 139.
- Nitrogen dioxide** (*nitric oxide*), breakdown potentials in, I, 8.
- determination of, photometer for, I, 280.
- heat of adsorption of, by silica gel, I, 294.
- inhibition by, of free radical chain reactions, I, 402.
- inorganic complexes of, I, 354.
- oxidation of, low-temperature, I, 269.
- reaction of, with carbon monoxide, I, 147.
- with nitroso-compounds, II, 192.
- solubility of, in methyl alcohol, I, 359.
- tetroxide, kinetics of reaction of, with sulphur dioxide, I, 207.
- oxides, recovery of, by adsorption, I, 294.
- tetraduterobromide, retrograde transition of, I, 139.
- Nitrogen acids**, and their salts, spectra of, absorption, I, 40.
- Nitric acid**, electrolytic dissociation of, I, 23.
- enthalpy-temperature nomograph for mixtures of, with sulphuric acid and water, I, 368.
- entropies of, and its mono- and tri-hydrates, I, 146.
- reaction of, with dimethylaniline, II, 400.
- spectrum of, absorption, near infra-red, I, 288.
- Nitrates**, determination of, colorimetrically, I, 26.
- in coloured effluents, etc., I, 184.
- electrolysis of, with adipates,  $\beta$ -isoamyloxy-propionates, and levulates, II, 216.
- with isobutylacetates or *n*-valerates, II, 277.
- spectra of, absorption, ultra-violet, I, 351.
- Nitrous acid**, as nitrating and oxidising agent, II, 50.
- reaction of, with methylamine, II, 76.
- Nitrites**, decomposition of, thermal, I, 245.
- determination of, iodometrically, I, 408.
- Nitrogen organic compounds**, heterocyclic, II, 358, 425.
- spectra of, absorption, ultra-violet, I, 386.
- qualitative analysis of, II, 212.
- spectra of, Raman, I, 165, 315.
- Nitrogen detection and determination** :—
- detection of, in organic substances, II, 432.
- determination of, II, 243.
- azotometer for, II, 339.
- by Kjeldahl method, ammonia distillation in, II, 67.
- by micro-Dumas method, II, 183.
- by micro-Kjeldahl method, II, 211, 292.
- in biological materials, III, 503.
- in blood and saliva, III, 952.
- microgasometrically, Hengar selenised granules for, III, 360.
- nitrate, determination of, in soil extracts, III, 427.
- Nitrogen-hydrogen linkings**. See Hydrogen-nitrogen linkings.
- Nitrogen-hydrogen-nitrogen linkings**, II, 63, 89.
- Nitrometers**, semi-micro-, Du Pont type, I, 187.
- Nitrones**, II, 361.
- Nitroparaffins**, metabolism of, III, 625.
- spectra of, Raman, I, 315.
- Nitroprussic acid**, sodium salt. See under Sodium organic compounds.
- Nitrosoamines**, rearrangement of, II, 355.
- Nitroso-compounds**, action of nitrogen dioxide on, II, 192.
- aromatic, condensation of, with dinitrotoluene, II, 361.
- Nitrosyl chloride**, aqueous, free energy of formation of, I, 175.
- compounds, metallic, stability and properties of, I, 110.
- Nitrous acid**. See under Nitrogen.
- Nitrous oxide**. See Nitrogen monoxide.
- Nitzschia**, cultivation of, III, 491.
- Nitzschia kützingeriana**, colony formation by, III, 491.
- skeleton-free form of, III, 491.
- Noguchia granulosis**, isolation of, III, 781.
- Noise**, and its suppression, III, 449.
- Nolina texana**, toxicity of, to sheep and goats, III, 844.
- Noma**, treatment of, with formaldehyde, III, 162.
- n-Nonadecan- $\kappa$ -ol**, II, 127.
- Nonaldehyde**, peroxide from, II, 187.
- n-Nonane**,  $\epsilon$ -amino-, and its salts, II, 168.
- Nonane- $\beta$ -dione**, II, 300.
- n-Nonan- $\beta$ -ol**,  $\alpha$ -nitro-, II, 295.
- n-Nonan- $\gamma$ -ol**,  $\beta$ -nitro-, II, 295.
- Nonoic acid**,  $\theta$ -bromo-, and  $\theta$ -iodo-, and their methyl esters, II, 344.
- p-n-Nonylbenzenesulphonamide**, II, 136.
- 5'-n-Nonyl-3'-4':5':6'-tetrahydrocannabinol**, II, 236.
- isoNoragathenol**, derivatives of, II, 371.
- isoNoragathic acid**, methyl ester, decomposition of, by ozone, II, 370.
- Nor- $\beta$ -amyradienedionol**, and its derivatives, II, 372.
- Noraurantin**, and its hexa-acetate, II, 431.
- Norborneolcarboxylic acid**, and its derivatives, II, 369.
- Norcafestane**, II, 199.
- Norcafestanedione**, and its disemicarbazone, II, 199.
- Norcafestanolone-A**, and its derivatives, II, 199.
- Norcafestanolone-C**, and its derivatives, II, 371.
- Norcafestanolonolactone-A** 2:3-dinitrophenyl-hydrazone, II, 371.
- Norcafestanolonolactones**, II, 371.
- Norcafestanonal**, and its disemicarbazone, II, 371.
- Norcafestanonic acid**, and its derivatives, II, 371.
- Norcamphorcarboxylic acid**, ethyl ester, and its hydrazone, II, 369.
- Norcedrenedicarboxylic acid**, anhydride, II, 266.
- $\Delta^{5,8-20:22}$ -Norcholadienic acid**, and its methyl ester, and its acetyl derivative, methyl ester, II, 265.
- Norallocholic acid**, 3( $\beta$ ):20-dihydroxy-, and its methyl ester, and its 3( $\beta$ )-acetyl derivative, methyl ester, II, 265.
- Norcholanolactone**, 3(a):20:21-trihydroxy-, 3(a)-acetyl derivative, II, 232.
- 3( $\beta$ ):20:21-trihydroxy-, 3( $\beta$ )-acetyl derivative, II, 415.
- Norallocholanolactone**, 3( $\beta$ ):20:21-trihydroxy-, 3( $\beta$ )-acetyl derivative, II, 232.
- Norcholanyl acetoxymethyl ketone**, II, 415.
- $\beta$ -Norcholanyl- $\Delta^{\alpha\beta}$ -butenolide**,  $\beta$ -3( $\beta$ )-hydroxy-, acetyl derivative, II, 265.
- Norcholanyl chloromethyl ketone**, II, 415.
- $\Delta^5$ -Norcholenic acid**, 3( $\beta$ ):20-dihydroxy-, and its acetate, II, 264.
- $\Delta^{20:22}$ -Norallocholenic acid**, 3( $\beta$ )-hydroxy-, acetyl derivative, methyl ester, oxidation of, by selenium dioxide, II, 264.
- and its methyl ester, and its 3( $\beta$ )-acetyl derivative, methyl ester, II, 265.
- $\Delta^{20:22}$ -Norcholenolactone**, 3(a):21-dihydroxy-, II, 231.
- $\Delta^{20:22}$ -Norallocholenolactone**, 3( $\beta$ ):21-dihydroxy-, and its 3( $\beta$ )-acetyl derivative, II, 232.
- $\beta$ - $\Delta^5$ -23-Norcholenyl- $\Delta^{\alpha\beta}$ -butenolide**,  $\beta$ -3( $\beta$ )-hydroxy-, acetyl derivative, II, 265.
- $\Delta^5$ -(6)-Norcholestene-7-carboxylic acid**, 3-hydroxy-, 3-acetyl derivative, II, 102.
- Norcholyl chloromethyl ketone**, II, 415.
- Nor-(4)-4||5-coprostan-3-lactone**, 5-hydroxy-, II, 366.
- isoNordeoxypantothenic acid**. See  $\beta$ -Valcramido-propionic acid,  $\beta$ - $\gamma$ -hydroxy-.
- Norchinoceyadienol acetate**, II, 418.
- 2-Norchydnoacaryl-1:3:4-thiodiazole**, 5-amino-, and its 5-*p*-acetylbenzenesulphonyl derivative, II, 290.
- Norlupanol**, and its acetate, II, 60.
- Norlupanone**, II, 60.
- Normuscine** *l*-menthylhydrazone, II, 178.
- Nornicotine**, identification of, II, 384.
- Noroleic acid**. See  $\Delta^7$ -Heptadecenoic acid.
- Nor-(4)-4||5-pregnan-20-one-3-carboxylolactone**, 5-hydroxy-, and its semicarbazone, II, 366.
- Norsiaresinodione**, II, 418.
- Norsiaresinone**, II, 418.
- Nor- $\alpha$ -tocopherol**, and its allophanate, II, 326.
- Nor- $\alpha$ -tocophenylquinol di-*p*-bromobenzoate**, II, 326.
- Nose**, acetylcholine in mucosa of, effect of oestrogen on, III, 132.
- allergy of, treated with benzedrine and histidine, III, 561.

- Nose**, effect of flying on, III, 591.  
mucous membrane of, congestion of, effect of  
Ciba on, III, 481.  
physiology of, III, 101.  
vitamins and, III, 221.
- Notholana sinuata***, fern poisoning in cattle,  
goats, and sheep due to, III, 772.
- Nova Herculis**, spectra of, emission, I, 125.  
**Nova DQ Herculis**, spectrum of, I, 190.  
**Nova Lacertae**, spectrograms of, I, 310.  
**Nova RT Serpentis**, spectrum of, I, 190.
- Novolac**. See under Resins, synthetic.
- Novoxil**, treatment with, of mastitis in cows,  
III, 546.
- Nucleic acid**, constituents of, and developmental  
growth, III, 248.  
haemopoietic effect of, on rats on milk diet,  
III, 871.  
response of bone marrow to, in mice, III, 662.  
yield of, from irradiated yeast, III, 490.
- Nucleic acids**, II, 381; III, 777.  
structure of, and their enzymic degradation,  
II, 334.
- Nucleoproteins**, composition of, from normal  
liver and hepatic tumour, III, 401.  
in urine, in relation to sex in mice, III, 461.
- Nucleosides**, content of, in organs, III, 900.  
determination of, photometrically, with  
orcinol, III, 952.
- Nucleotides**, content of, in organs, III, 900.  
determination of, photometrically, with orcinol,  
III, 952.
- Nutrition**, animal, carotene in relation to, III,  
469.  
effect on, of mineral oil ingestion, III, 827.  
vitamins and minerals in, III, 405.
- bee's, III, 152.  
calf's, calcium in, III, 537.  
carbohydrate, fat, and protein, intravenously  
injected in man, III, 699.  
chick's, *Lactobacillus casei*  $\epsilon$  factor in, III,  
621.  
deficiency of, blood of monkeys in, III, 871.  
effect of, on infection, III, 469.  
peripheral nerves in, III, 210.  
development of children in relation to, III,  
152.  
diseases of, III, 618.  
disorders from, due to vitamin-E deficiency in  
laboratory animals, III, 473.  
in pregnancy, III, 467.  
insect's, fat-soluble factor in, III, 538.
- North Carolina, blood-vitamin-A and dark  
adaptation tests in, III, 908.  
dark adaptometer and blood-vitamin-A  
measurements in, III, 449.  
of surgical patients, III, 37, 467.  
physical fitness and, III, 617.  
pig's, pantothenic acid in, III, 911.  
prenatal, effect of, on infant, III, 467.  
requirement of, for children, III, 617.  
rusting in rats in relation to, III, 155.  
sulphaguanidine in experiments on, III, 42.  
United States, III, 152.  
wartime, III, 325, 467.  
effect of, on child health, III, 617.
- Nystagmus**, hereditary, sex-linked, III, 588.  
in Dutch coal mines, III, 221.  
optic, in schizophrenia, III, 883.  
optokinetic, in concussion and other di-  
encephalic disturbances, diagnostic signifi-  
cance of, III, 301.  
subcortical, in lesions of midbrain and  
vestibular nuclei, III, 16.  
vertical, after lesions of cerebellar vermis, III,  
25.  
vestibular, III, 25.
- O.**
- Oats**, common and hull-less, hygroscopicity and  
respiration in, III, 947.  
See also *Avena sativa*.
- Obesity**, III, 157.  
aetiology of, lipophilia in, III, 766.  
calorigenic action of thyroid substance on, III,  
594.
- Obesity**, cardiac work and weight reduction in,  
III, 801.  
experimental, from hypothalamic and pituitary  
lesions, in dogs, III, 673.  
in childhood, III, 766.  
treatment of, with diet and thyroid, III, 257.
- Obscurine**, and its diperchlorate, II, 291.
- Obstetrics**, analgesia and anaesthesia in, III,  
412.  
disinfection in, III, 336.  
procaine hydrochloride infiltration of perineum  
in, III, 549.  
sacral anaesthesia in, III, 412.  
serum-lipase in, III, 292.  
shock in. See under Shock.  
treatment in, use of vitamin-K in, III, 664.  
yellow atrophy and chloroform poisoning in,  
III, 319.
- Ocelli**, lateral, dioptric apparatus of, III, 885.
- Ochronosis**, alkaptonuric, X-ray findings in, III,  
281.
- $\Delta^4$ -*n*-Octadecadienoic acid**, and its methyl ester,  
II, 392.
- Octadecane- $\alpha\omega$ -dicarboxylic acids**,  $\kappa$ -dibromo-,  
and  $\kappa$ -dihydroxy-, and their derivatives, II,  
298.
- Octadecane- $\beta$ -dione**, II, 300.
- "Octadecane nitrile"**, unilayers of, area-pressure-  
temperature relations of, I, 396.
- $\eta$ -Octadecane- $\alpha\alpha\beta$ -tricarboxylic acid**, II, 278.
- $\Delta^4$ -Octadecene- $\alpha\omega$ -dicarboxylic acids**, and their  
derivatives, II, 298.
- Octadecenoic acids**, derivatives of, II, 297.
- $\Delta^4$ -Octadecen- $\alpha$ -ol arsenite**, II, 343.
- Octadecyl alcohol**, electro-osmosis and electro-  
phoresis of, I, 365.
- n*-Octadecyl nitrite**, II, 215.
- Octadecylamine**, acetate, solutions of, I, 58.  
equilibrium of, with water, I, 398.  
hydrochloride, solutions of, I, 97.
- Octadecylamines**, acetates and hydrochlorides,  
electrical conductivity of solutions of, I, 147.
- Octadecylisothiocarbamide**, and its hydro-  
chloride, II, 391.
- Octadecylthiourethane**, II, 391.
- Octahydro-5:6-benzofluoranthene**, II, 192.
- Octahydrometanicotine**, and its derivatives, II,  
384.
- $\Delta^8$ - $^{10}$ -Octahydronaphthalene**, oxidation of, II, 228.  
and its derivatives, II, 90.
- $\Delta^8$ - $^{10}$ -Octahydronaphthalene**, 1:5-dihydroxy-, II,  
90.
- $\Delta^8$ - $^{10}$ -Octahydronaphthalene-1:5-dione**, and its  
dioxime, II, 90.
- acryy*-Octamethyltetraaminotetraphenylvinyl-**  
**carbonium perchlorate**, II, 194.
- Octamethyl-6-galactosidogalactose**, II, 219.
- $\beta\beta\gamma\gamma\zeta\eta$ -Octamethyl-*n*-octane**, II, 70.
- n*-Octane**, liquid, compressibility of, I, 392.  
Mollier diagrams for mixtures of, with air and  
water, I, 331.
- n*-Octane**,  $\beta\beta$ -difluoro-, II, 294.
- dl*-Octane- $\alpha\beta$ -diol**, and its derivatives, II, 296.
- n*-Octane- $\alpha\delta\theta$ -tetra-carboxylic acid**, II, 353.
- Octanols**, isomeric, structure and properties of,  
II, 128.
- $\Delta^4$ -Octen-8-ol**, II, 430.
- cycloOctenothiazole**, 2-amino-, hydrochloride, II,  
209.
- Octine**. See Octinene.
- $\Delta^8$ -Octinene**, spectrum of, Raman, I, 227.
- Octoic acid**, *p*-octoylphenyl ester, II, 17.  
phenyl ester, Fries rearrangement of, II, 17.
- n*-Octoic acid**,  $\eta$ -bromo-, and  $\eta$ -iodo-, and their  
methyl esters, II, 344.
- $\alpha$ -hydroxy-, *p*-bromophenacyl, phenacyl, and  
*p*-phenylphenacyl esters, II, 74.  
 $\beta$ -piperidinoethyl ester, hydrochloride, II,  
237.
- 2-*n*-Octylresorcinol**, and its dimethyl ether, II,  
308.
- Octylamine**, equilibrium of, with water, I, 398.  
hydrochloride, electrical conductivity of  
aqueous solutions of, I, 299.
- n*-Octyldocosane**, II, 125, 341.
- n*-Octylheptadecane**, II, 125.
- n*-Octyl- $\Delta^8$ -heptadecene**, II, 125.
- 5''-*n*-Octylhexahydrocannabinol**, II, 236.
- 2-Octyl-3-methyl- $\Delta^7$ -cyclopentenone**, and its semi-  
carbazone, II, 363.
- p*-*n*-Octylphenyl methyl ketone**, and its deriv-  
atives, II, 258.
- 2-*n*-Octylresorcinol**, II, 308.
- 5''-*n*-Octyl-3':4':5':6'-tetrahydrocannabinol**, II,  
236.
- $\alpha$ -*n*-Octylundecamide**, II, 345.
- $\alpha$ -*n*-Octylundecanitrile**, II, 345.
- Oculogyric crises**, III, 25.
- Odoriferous compounds**, II, 409.
- Œdema**, cerebral, allergic, III, 784.  
treatment of, effect of, on cerebrospinal  
fluid pressure, III, 675.  
menstrual, with intracranial hypertension,  
III, 447.  
nephrotic, effect on, of gum acacia, III, 290.  
nutritional, in children, III, 617.  
ocular signs of, III, 680.  
of pregnancy toxæmia, treatment of, with  
vitamin-P, III, 330.  
synovial fluid and membrane abnormalities  
due to, III, 146.  
treatment of, diuretics in, III, 551.  
with hypoproteinaemia, III, 574.
- Œsophagus**, absorption from, of undigested  
protein, III, 240.  
atresia of, congenital, III, 894.  
function of, influence of emotions on, III, 240.  
muscle of. See under Muscle.  
post-cricoid web in, radiology of, III, 691.  
stenosis of, syndrome of, III, 142.
- Œstradiol**, absorption of, and its esters, from  
implanted tablets in guinea-pigs, III, 387,  
890.  
benzoate, control of menopausal symptoms  
with, III, 689.  
effect of, on gonads, endocrines, and growth  
of female rats, III, 453.  
on osseous tissue changes in dogs, III, 602.  
on serum-lipins of rats on high-fat diet,  
III, 688.  
inhibition of ovary and turgescent perineal  
skin of baboon by, III, 233.  
treatment with, fat distribution in castrate  
rabbits after, III, 750.  
of menopause, III, 525, 601.  
with progesterone, uterine vascular changes  
due to, in castrated rabbits, III, 132.
- carcinogenic effect of, in Marsh-Buffalo mice,  
III, 614.  
effect of, on blood, bone-marrow, and liver,  
III, 132.  
on gonadotropic hormone secretion, III, 28.  
effect of overdosage of, on uterus in guinea-  
pigs, III, 130.  
esterified and non-esterified, percutaneous  
potency of, III, 525.  
morphogenetic action of, effect of testosterone  
on, III, 605.  
œstrogenic potency of, compared with diethyl-  
stilbœstrol, œstriol, and œstrone in infantile  
rats, III, 132.
- dipropionate**, effect of, on atherosclerosis in  
rabbits, III, 441.  
treatment with, of menopause, III, 525.  
of pruritis, III, 815.
- vaginal response to, III, 454.
- $\alpha$ -Œstradiol**, administration of, sublingually, III,  
749.  
conversion of, into œstrone and  $\beta$ -œstradiol  
by ovariectomised-hysterectomised rats, III,  
474.  
fate of, injected in man, III, 233.
- Œstrin**, effect of, on castrated and intact mice,  
III, 757.  
on mouse ovary, III, 453.
- Œstrinase**, œstrone activation by, III, 811.
- Œstriol**, conversion of œstrone into, III, 812.  
œstrogenic potency of, compared with diethyl-  
stilbœstrol, œstradiol, and œstrone in in-  
fantile rats, III, 132.
- Œstrogens**, III, 388, 812.  
assay of, by intrasplenic injection, III, 387.  
bleeding due to, duration of, in castrated  
macaques, III, 132.  
crystalline, absorption of, from paraffin nodules  
in rats, III, 811.

- Œstrogens**, determination of, in blood by intravaginal application of extracts and desiccated material, III, 688.  
distribution of, in blood of pregnant and non-pregnant women, III, 689.  
dose and type of, relation of, to nausea and vomiting, III, 689.  
effect of, and pituitary gonadotropin, by percutaneous application, III, 233.  
augmentative, III, 28.  
in relation to vitamin-B complex, III, 620.  
on acetylcholine in nasal mucosa, III, 132.  
on blood, in dog and monkey, III, 198.  
on blood picture, III, 130, 234.  
on capillary permeability, III, 130, 602.  
on corpora lutea of pregnant rabbits, III, 134.  
on genital tract connective tissues of rats, III, 524.  
on gonadotropic potency, III, 525.  
on hyperthyroid rats, III, 130.  
on insulin content of pancreas, III, 388.  
on liver, III, 693.  
on mammary gland in pregnancy, lactation, and retrogression in mice, III, 36.  
on mammary glands of hypophysectomised rats, III, 138.  
on rats, III, 128.  
on skeletal tissues in mice, III, 77, 78.  
on uterine tissue respiration in rats, III, 453.  
on young of injected lactating rats, III, 750.  
excretion of, in bile, III, 811.  
in bile and urine after œstrone administration, III, 601.  
experimental control with, of prolonged pregnancy in lactating rats, III, 751.  
extraction of, apparatus for, III, 453.  
for œstrus induction in anœstrous cattle, III, 601.  
implantation of, in ovariectomised women, III, 601.  
treatment by, of menopause, III, 688.  
implanted, therapeutic value of, III, 890.  
in blood, at intervals, III, 12.  
in gynaecology, III, 523.  
in urine of boys with muscular dystrophy, III, 583.  
inactivation of, by liver of guinea-pigs in different sexual states, III, 130.  
labour induction by, III, 130.  
metabolism of. See under Metabolism.  
ovarian, inactivation of, in liver, effect of vitamin-B deficiency on, III, 750.  
precursors of, III, 131.  
production of epithelial growths in human cervical mucosa by, III, 386.  
responses to, of rhesus monkeys, III, 131.  
rôle of, in mammary growth stimulation by pituitary and progesterone, III, 601.  
in pregnancy, III, 602.  
sensitivity to, studied by induced mating responses in female guinea-pig and rat, III, 234.  
synthetic, configuration of, II, 89.  
effect of tablet implantation of, on pituitary of immature rats, III, 596.  
tumours induced by, III, 465.  
with prolonged action when given orally, III, 749.  
testicular changes induced by, in relation to syphilis resistance, III, 130.  
treatment with, III, 525.  
and androgen, of melancholia, III, 216.  
limitations of, III, 388.  
of female eunuchoid, III, 311.  
of gonorrhœal vulvovaginitis, III, 890.  
of hyperthyroidism, III, 684.  
of meno-metrorrhagia and ovarian sterility, III, 386.  
of stomatitis and vulvitis, III, 311.  
of tinea capitis, III, 524.  
uterine cancer due to, III, 132.  
triphenylethylene, effect of, on growth and egg-laying capacity of poultry, III, 311.  
tumour induction by, effect of sex on, in guinea-pigs, III, 149.
- Œstrogens**, urinary, effect of, on bactericidal property of rabbit serum, III, 387.  
specific, fibromatogenic action of, in guinea-pigs, III, 614.  
**Œstrogenic activity**, constitution and, II, 223; III, 523.  
in urine of castrates and eunuchoids, III, 690.  
**Œstrone**, assay of, in guinea-pigs, III, 131.  
azobenzene-4-carboxylate, II, 58.  
conversion of, into œstriol, III, 812.  
crystalline, pellets of, bladder and prostate lesions due to, III, 234.  
effect of, on calcium and nitrogen balance in girls at puberty, III, 132.  
on guinea-pig uterus, III, 688.  
on hemagglutinins, III, 811.  
on hypophyseal weight in thyrohyperplastic rats, III, 233.  
on inbred strains of mice, with reference to mammary glands, III, 749.  
on lactogen content of blood and pituitary of rabbits, III, 598.  
on mammary glands of rabbits, III, 387.  
on melanin formation inhibition by glutathione, III, 130.  
on uterine muscle, III, 130.  
on uterine response to ergometrine in rabbits, III, 634.  
on weight of genitals and viscera in cockerels, III, 600.  
enzyme which activates, III, 811.  
free, parenteral and oral action of, III, 812.  
glucosides, parenteral and oral action of, III, 812.  
inactivation of, in rat, III, 28.  
isomeride of, II, 230.  
synthesis of, II, 263.  
œstrogenic potency of, compared with diethylstilbestrol, œstradiol, and œstriol, III, 132.  
oxidation of, by hydrogen peroxide, II, 199.  
response to, effect of œstrogenic treatment on, in ovariectomised mice, III, 131.  
suspensions, effect of, on menopause, III, 601.  
treatment with, of melancholia, III, 216.  
uterine bleeding after injection of, in spayed monkeys, III, 131.  
**Œstrone- $\alpha$** , and its benzoate, II, 263.  
**Œstrous cycle**, adrenal changes in relation to, in rats, III, 119.  
effect of, on action of testosterone propionate on organ and body weights of female rats, III, 752.  
effect of light on, in rats, III, 125.  
variations in bovine cervical mucus during, III, 139.  
**Œstrus**, artificially induced, in immature guinea-pigs, III, 386.  
duration of, after stilbestrol administration, III, 387.  
effect on, of anterior pituitary hormone, glucose, light, and starvation, III, 315.  
persistent, diœstrus and corpus luteum formation in, by hormone and serum, in rats, III, 384.  
prolongation of, by injection of œstrogen crystal suspensions, III, 387.  
Ohm's law, I, 200.  
Oils, antiseptic, dermatitis due to, III, 712.  
cutting, dermatitis from, III, 170.  
compressibility of, adiabatic, I, 357.  
drying, autoxidation of, II, 346.  
essential, II, 246.  
allyl and propenyl, synthesis of, II, 281.  
from fresh-water fish, III, 395.  
hydrocarbon, dielectric properties of, I, 149.  
films, containing spreaders, stability of, on water, I, 360.  
oxidation of, I, 149.  
hydrolysis of, by enzymes, III, 418.  
iodised, effect of, on uterus, III, 312.  
mineral, effect of ingestion of, on animal nutrition, III, 827.  
from gastropods, I, 348.  
in sedimentary basins of Ontario, I, 188.  
spreading of, on water, I, 94, 95.  
white, as dust-layers, III, 421.  
sulphonated, as detergent, III, 415.  
vitaminised, III, 907.
- Oil fields**, British, geology of, I, 252.  
Burma, I, 252.  
Oil of wintergreen, poisoning by. See Poisoning, methyl salicylate.  
Oil seeds, phosphatides of, III, 950.  
Oil traps, stratigraphic, search for, I, 348.  
Oil wells, location of, I, 76.  
Ointments, bases for, against poison ivy, III, 773.  
against sunlight, III, 712.  
bacteriostatic effect of sulphathiazole in, III, 837.  
effect of, on bacterial flora of skin, III, 547.  
Oleadienols I and II, II, 418.  
Oleadienone II, II, 418.  
Oleanol, and its acetate, II, 372.  
Oleanolio acid, thermal decomposition of, II, 372.  
Oleanolone, II, 372.  
Oleanylene, II, 372.  
isoOleanylene, II, 372.  
Olefines, addition to, of halogen acids, peroxide effect in, II, 70.  
alkylation of isoparaffins with, II, 1.  
autoxidation in, II, 341.  
equilibrium of, from pinacolyl alcohol, I, 403.  
from allylic chlorides, II, 126.  
ionic and radical mechanisms in, II, 341.  
 $\alpha$ -methylene reactivity in, II, 341.  
peroxides, constitution and reactions of, II, 170.  
ozonides, oxidative fission of, II, 342.  
phenyl-substituted, reduction of, at dropping mercury cathodes, I, 400.  
polymerisation of, catalytically, in presence of phosphoric acid, I, 302.  
induced by free radicals, I, 151.  
preparation of, from acetylenes, II, 71.  
reaction of, with sulphur dioxide, non-peroxide catalysts for, I, 301.  
isoOlefines, containing quaternary carbon, synthesis of, II, 185.  
Olefinic compounds, additions to, II, 125.  
Oleic acid, phenyl mercuric ester, irritant properties of, III, 415.  
physical constants of, I, 388.  
reaction of, with oxygen, I, 370.  
sodium salt, absorption of from jejunum, effect of bile on, III, 754.  
surface tension and concentration of solutions of, I, 203.  
Oleyl benzyl sulphide, II, 390.  
N<sup>1</sup>-Oleylsulphanilamidoformaldehyde, sodium hydrogen sulphite, II, 307.  
Oleylsulphonic acid, amide and sodium salt, II, 391.  
Oleylisoithiocarbamide, and its derivatives, II, 390.  
Oleyl thiol, and its *p*-nitrobenzoate, II, 390.  
Olfactory nerve. See under Nerves.  
Olfactory-parotid reflex, III, 739.  
Oligopeptides, *N*-methanesulphonyl derivatives of, II, 5.  
Olivary bodies and nucleus. See under Brain.  
Olive oil, aggravating action of, on tuberculosis, inhibition of, by ethyl succinate in guinea-pigs, III, 773.  
treatment with, and oil of chenopodium, of dermatitis linearis migrans, III, 48.  
Olivine, structure of, and salesite, I, 251.  
Olivine-hypersthene-dolerites, Santal Parganas, Bihar, I, 379.  
Olivine-hypersthene-gabbros, Santal Parganas, Bihar, I, 379.  
Omentum, effect on, of particulate matter injections, in rats, III, 12.  
great, motility and response of, III, 692.  
milk spots of, lymph vessels in, III, 789.  
Omphalitis, streptococcal, non-hæmolytic, with parotitis and meningitis, treatment of, in premature infant, III, 335.  
*Oncorhynchus gorbusha*, length and weight of, egg content in relation to, III, 523.  
*Oncorhynchus nerka*, length and weight of, egg content in relation to, III, 523.  
*Ondatra zibethicus rivalicus*. See Muskrat, Louisiana.  
Ontario, gas and oil in sedimentary basins of, I, 188.



- Ontogenesis**, enzymes in, III, 284, 777, 791.  
*Onychiurus armatus*, ventral tube of, function of, III, 247.  
**Onycholysis** in fur workers, III, 338.  
**Oogenesis** in mice and starlings, III, 310.  
**Operating rooms**, air-borne bacteria in, III, 718.  
**Operations**, febrile reactions after, treatment of, with sulphathiazole, III, 918.  
     major, pholedrine in, III, 842.  
     plasma-amino-acid-nitrogen changes during, III, 924.  
**Ophthalmia**, periodic, thyroid activity in relation to, III, 519.  
     phlyctenular, aetiology of, III, 587.  
**Ophthalmia neonatorum**, treatment of, with sulphapyridine, III, 767.  
**Ophthalmology**, vitamin therapy in, III, 676.  
**Ophthalmoneurology**, research in, III, 25.  
**Ophthalmomyelitis**, III, 676.  
**Opiates**. See *Narcotics*.  
**Opossums**, ova, origin of, III, 569.  
     rete apparatus in, origin of, III, 658.  
     See also *Didelphys virginiana*.  
**Opsonic index**, determination of, III, 498.  
**Opsonocytophagic index**, determination of, staining of blood smears in, III, 8.  
**Opsopyrrole ketone**. See 3:3'-Dimethyl-4:4'-diethylpyrroketone.  
**Optic disc**, hyaline bodies of, glaucoma associated with, III, 113.  
**Optic nerves**. See under *Nerves*.  
**Optical properties** of inorganic and organic compounds, I, 320.  
**Orang**, morphology of, and gorilla of same age, III, 568.  
**Oranges**, ascorbic acid in, III, 473.  
     Florida, seasonal changes in, III, 179.  
     of Northern Circars, constituents of, II, 431.  
     osage, pigments of, II, 179, 242.  
**Orange juice**, effect of, on calcium utilisation in relation to teeth, III, 911.  
     Florida, carotenoid pigments in, III, 182.  
**Orbit**, nerve sheath tumour of. See *Neurilemmoma*, orbital.  
**Orcacetophenone**, benzylation of, and its methyl ether, II, 60.  
**Orcinol**, condensation of, with succinic anhydride, II, 261.  
**Orcinol series**, acyl group migration in, II, 409.  
**Ores**, auto-radiography of, I, 115.  
     Captain's Flat, N.S.W., I, 121.  
     deposition of, I, 217.  
     detection of, I, 212.  
     magmas and, I, 348.  
     vein formation in, I, 347.  
**Oreoselone**, II, 269.  
**Organs**, dead, blood-group antigen in, III, 794.  
     hematopoietic, effect on, of splenic extracts from purpura, in rabbits, III, 572.  
     mineral substances in, changes in, in fish, III, 901.  
     nucleoside, nucleotide, and purine contents of, III, 900.  
     reproductive. See *Genitals*, *Ovary*, and *Testicles*.  
     sense, discoveries concerning, III, 379.  
     sex. See *Genitals*, *Ovary*, and *Testicles*.  
     small, volume and cell numbers in, determination of, III, 569.  
     visceral, innervation of, in birds, III, 300.  
**Organic chemistry**, preparations in, II, 213, 217, 241, 245, 299, 341, 350.  
**Organic compounds**, action on, of fluorine, II, 84.  
     adsorption of, I, 395.  
     analysis of mixtures of, by physical methods, II, 339.  
     breaking of chains in, in oxygen-containing gases, I, 208.  
     b.p. of, and molecular structure, I, 232.  
     catalytic hydrogenation of, II, 309.  
     constitution of, and absorption spectra, I, 194.  
     crystal structure of, I, 87.  
     determination in, of deuterium, II, 253.  
         of hydroxyl, II, 68.  
         of mercury, II, 159.  
         of sulphur, II, 159, 276.  
     determination of, with vanadous sulphate, I, 279.  
**Organic compounds**, diamagnetism of, I, 320.  
     electrolytic reduction of, II, 73.  
         at alloy cathodes, I, 25.  
         effect of wetting agents on, I, 175.  
         fine structure of, II, 293.  
         heat capacity of vapours of, I, 292.  
         hydrogenation of, alkali and alkaline-earth catalysts for, I, 107.  
         identification of, II, 136, 328.  
             by microscopy, II, 1.  
             impure, m.p. of, II, 341.  
         insoluble in water, determination in, of water, II, 388.  
         liquid. See *Liquids*, organic.  
         long-chain, surface tension of solutions of, I, 264.  
         miscibility of, anomalous, I, 201.  
         mixed, low-pressure distillation of, I, 188.  
         molecular, formation and structure of, II, 229.  
         optical properties of, I, 320.  
         osmotic coefficients and constitution of, I, 174.  
         parachors of, I, 290.  
         phase-rule experiments with, I, 240.  
         preparation methods for, I, 303.  
         reactions of, calorimetry of, I, 299.  
             with boron fluoride, II, 90.  
         saturated, elimination reactions on, I, 148.  
         solid, steric hindrance in, I, 197.  
         solubility and constitution of, I, 170.  
         spectra of, absorption, in solution, I, 81.  
             infra-red, I, 193.  
             near infra-red, of homologues and isomeric, I, 193.  
             ultra-violet, I, 81.  
         emission, in glow discharge, I, 313.  
         ultra-violet, by electron excitation in discharge tubes, I, 226.  
         structure of, para-hydrogen testing of, I, 166.  
         substitution in, at saturated carbon atoms, I, 148.  
         ortho-, hindrance of resonance by, I, 83.  
         unsaturated, iodination of, I, 98.  
         volatility of, I, 357.  
**Organisms**, aquatic, volumetric microrespirometer for, III, 834.  
     weighing of, III, 866.  
     mammalian, function development in, III, 246.  
**Organo-metallic compounds**, II, 67.  
     group IV, radical substitution in, II, 241.  
     halogen, dipole moments and structures of, I, 133.  
     reactivities of, II, 41, 183, 337.  
**Organophilic-hydrophilic substances**, interfacial effect of, in relation to cell activity, III, 263.  
**Orpiment**, crystal structure of, I, 345.  
**Ortho-esters**, aliphatic, reaction of, with chloral hydrate, II, 76.  
**Orthoformic acid**, tri-*m*-nitrophenyl ester, II, 170.  
**Orthopaedics**, major, pentothal sodium in, III, 549.  
**Orthoptics**, training in, III, 21.  
     home, III, 221.  
**Orthopyroxenes**, lamellar structure in, I, 283.  
*Oryzias latipes*, development of, effect of colchicine on, III, 188.  
     effect of 2:4-dinitrophenol on, III, 5.  
**Os coniform**, III, 565.  
*iso*Osajin dimethyl ether, 2:3-epoxide, II, 179.  
**Osazones**, mixed, formation of, and their anhydrides, II, 47.  
**Osmium tetroxide**, polarographic reduction of, I, 101.  
     refractive index and dielectric constant of, I, 165.  
**Osmium organic compounds**, II, 256.  
**Osmotic pressure**, I, 174.  
     membrane action and, I, 142.  
     of colloidal solutions, I, 118.  
     theory of, I, 90, 393.  
**Ossification**, calcification and, III, 565.  
     endochondral, effect of pituitary growth hormone and thyroxine on, III, 889.  
     metaplastic, III, 821.  
     vitamin-D action in, III, 540.  
**Ossification centres**, appearance of, in children, III, 865.  
**Osteitis**, radiation, of ribs, III, 932.  
**Osteitis fibrosa cystica**. See *Recklinghausen's disease*.  
**Osteitis fibrosa localisata**, due to oestrogen, III, 78.  
**Osteochondritis**, relation of, to tuberculosis, III, 281.  
**Osteodystrophia fibrosa**, with exophthalmic goitre and precocious puberty, III, 684.  
**Osteogenesis imperfecta**, III, 79.  
**Osteomalacia**, after gastrectomy, III, 894.  
**Osteomyelitis**, production of, by sodium morrhuate and staphylococci, III, 719.  
     staphylococcal, hamatogenous, treatment of, with sulphathiazole, III, 706.  
     treatment of, with sulphathiazole, III, 919.  
**Osteopoiikilosis**, III, 865.  
     familial incidence of, III, 725.  
**Osteoporosis**, senile, of spinal column, III, 657.  
     simulating hyperparathyroidism, III, 595.  
**Osteosathyrosis**, congenital, III, 789.  
**Osteosclerosis**, with hamopoiesis and leukaemic blood reaction, III, 192.  
**Osteosis cutis**, in methylcholanthrene epidermal cancer in mice, III, 902.  
*Ostrea edulis*, fecundity of, III, 606.  
*Ostrea virginica*, eggs, osmotic properties of, III, 171.  
     fat, glycogen, iodine, and water of, during storage, III, 612.  
**Otitis media**, acute, chemotherapy of, III, 544.  
     treatment of, with sulphanilamide in children, III, 160.  
**Otolaryngology**, vitamins in, III, 682.  
**Otology**, Recklinghausen's disease in, III, 227.  
**Otorhinology**, X-ray therapy for benign conditions in, III, 25.  
**Otosclerosis**, hearing improvement in, oval window for, III, 226.  
**Ouabain**. See *g-Strophanthin*.  
**Ova**, cytoplasm of, in mice, III, 80.  
     echinoderm, fertilisation membrane of, expansibility of, III, 688.  
     human, pre-villous, III, 282.  
     macaque, first maturation division of, III, 283.  
     multiple, in follicles of young monkeys, III, 385.  
     origin of, in opossum, III, 569.  
     rhesus monkey, III, 283.  
     transport of, through Fallopian tube, III, 312.  
     yolk-nucleus complex of, in man, III, 430.  
     See also *Eggs* and *Embryos*.  
**Ovalbumin**, determination in, of thiol groups, III, 864.  
     electrophoresis of, with yeast-nucleic acid, III, 487.  
     fibres produced from, II, 122.  
     hydrolysis of, by alkalis, II, 241.  
     products of, II, 337.  
     insoluble, kinetics of formation of, I, 105.  
     sols, effect of X-rays on, III, 58.  
**Ovariectomy**, effect of, on adrenals in rats, III, 228.  
     on pregnancy in monkeys, III, 386.  
     histological changes after, in mice, III, 232.  
     oestrogen implantation in, in women, III, 601.  
     treatment with stilboestrol after, III, 890.  
**Ovary**, androgenic activity of, grafted in castrate male rat, III, 127.  
     cell changes in, in rats, after exposure to light or darkness, III, 868.  
     cysts in, oestrogenic hormone in, III, 249.  
     dystopic, in newborn, III, 659.  
     effect on, of oestrin injection in mice, III, 453.  
     of pregnancy urine injection, III, 313.  
     follicles of, forced ovulation of, in fowls, III, 891.  
     post-ovulatory, regression of, in birds, III, 600.  
     function of, and menstruation, III, 388.  
     effect of hypothyroidism on, in guinea-pigs, III, 129.  
     germinal epithelium of, proliferation stimulation of, III, 523.

**Ovary**, hormones of, action of, on uterus, latent period of, III, 891.  
 co-operation of, with anterior pituitary hormone, III, 312.  
 effect of ultra-violet rays on, III, 312.  
 follicular, carcinogenic action of, III, 401.  
 treatment with, of climacteric phenomena, III, 388.  
 in menstruation, interaction of, III, 454.  
 hypofunction of, effect of, on sex organs, III, 892.  
 mesonephroma of, III, 617.  
 newborn rat, development of, implanted in anterior chamber of adult rat's eyes, III, 232.  
 oestron production in, III, 749.  
 reaction of, to pregnancy urine, in relation to injection period, III, 238.  
 resection of, ovarian and uterine response to, III, 600.  
 sarcoma of, III, 467.  
 thecal gland in, in guinea-pigs, III, 892.  
 tumours of, III, 232.  
 Brenner, III, 617.  
 dysontogenetic, endocrine effects of, III, 813.  
 granulosa-cell. See *Desmoplastoma ovarii malignum*.  
 sympathicotrophic cell, virilism due to, III, 759.

**Overtoltage**, I, 241.

**Oviduct**, bitterling test for, III, 129.

**Ovomucoid**, carbohydrate residue in, II, 397.

**Ovulation**, copper-induced, inhibition of, by progesterone, in rabbits, III, 234.  
 human, effect of pregnant mare serum on, III, 892.  
 induction of, after hormone injection in fowls, III, 891.  
 premature, caused by oxytoxin and vasopressin, III, 810.  
 time of, in cattle, III, 385.

**Oxalacetic acid**, in leguminous plants, III, 181.  
 ketone decomposition of, effect of inorganic salts on, I, 302.

**Oxalostannic acid**, potassium salt, preparation and properties of, I, 405.

**Oxalothiometastannic acid**, dipotassium salt, I, 405.

**Oxalic acid**, ammonium salt, reaction of, with mercuric chloride catalysed by ferric salts, I, 177.  
 ammonium and potassium salts, solubility of, I, 360.  
 blood-. See under *Blood*.  
 bornyl ester, II, 369.  
 determination of, photo-electrically, III, 788.  
 haemostatic effect of, III, 872.  
 dihydrate, twin crystal structure of, I, 46.  
 lead salt, solubility of, I, 324.  
 metal salts, ultra-violet absorption spectra of, I, 288.  
 thermal dissociation of, in solution, I, 67.  
 undissociated, activity coefficient of, I, 145.  
 uranyl salt, photolysis of, I, 372.  
 urinary. See under *Urine*.

**Oxalyl bromide**, thermal and photochemical decomposition of, I, 109.  
 chloride, reaction of, with aralkyl hydrocarbons, II, 393.  
 with paraffin and unsaturated hydrocarbons, II, 215.  
 spectrum of, Raman, I, 165.

**Oxanilic acid**, thioamide, detection with, of copper, cobalt, and nickel, I, 184.

**Oxalafestanediol**, and its acetate, II, 198.

**Oxidase**, amine-, inhibitory action of, on vasoconstrictor effect of hypertensin, III, 374.  
 substrate-affinity and -specificity of, III, 846.  
 amino-, in central nervous system in man, III, 518.  
 d-amino-acid, activity of, diminished, in liver of tumour-bearing rats, III, 698.  
 degradation of d-amino-acids by, II, 394.  
 protein of, effect of X-rays on, III, 554.  
 substrate-affinity and -specificity of, III, 846.

**Oxidase**, ascorbic acid, reaction of, with ascorbic acid, III, 776.  
 cytochrome, development of, in chick embryos, III, 934.  
 in bull spermatozoa, III, 752.  
 spectrum of, III, 172.  
 in cardiac muscle, III, 715.  
 effect of, on hypertension, III, 734.  
 effect on, of benzylquinol, III, 264.  
 polyphenol, in kidney extracts, III, 488.  
 pyrocatechol, activity of, III, 418.  
 succosine, III, 640.  
 succinic, activity of, on dilution, III, 488.  
 in plants, III, 417.  
 in riboflavin-deficient rats, III, 341.  
 unsaturated fat, III, 418.  
 xanthine-, activity of, in livers of cancer-susceptible and cancer-resistant mice, III, 400.  
 in rat liver in riboflavin deficiency, III, 39.

**Oxidation**, I, 403; II, 71, 470, 475.  
 animal, influence of temperature on, III, 408.  
 by ultrasonic waves, I, 209.

**Oxidation-reduction**, electronic transfer in device for, I, 342.

**Oxides**, crystal lattice of, in relation to velocity of reduction, I, 332.  
 hydrated, X-ray study of, I, 46.  
 hydrous, sorption-desorption hysteresis in, I, 324.  
 reaction of, with Karl Fischer reagent, I, 112.  
 white, temperature radiation of, I, 84.

**$\alpha$ -Oxides**, halogenated, addition to, of halogen hydrides, II, 295.

**Oxidisable substances**, preservation of, in solution, III, 502.

**11( $\beta$ ):12( $\beta$ )-Oxido-3-acetoxycholanic acids**, methyl esters, II, 411.

**Oxido brassidic acid**, methyl ester, II, 347.

**Oxidocaryophyllene**, II, 369.

**11( $\beta$ ):12( $\beta$ )-Oxidocholanic acid**, and its methyl ester, II, 411.

**Oxido succinic acid**, methyl ester, II, 347.

**11( $\beta$ ):12( $\beta$ )-Oxido-3-hydroxycholanic acids**, methyl esters, II, 411.

**11( $\beta$ ):12( $\beta$ )-Oxido-3-ketocholanic acid**, methyl ester, II, 411.

**17:17a-Oxido-17a-methyl-D-homoandrostande**, 3-hydroxy-, and its acetate, II, 104.

**5:6(a)-Oxidopregnane-3( $\beta$ ):21-diol-20-one**, 21-acetate, II, 26.

**20:21-Oxido- $\Delta^4$ -pregnen-17(a)-ol-3-one**, II, 368.

**(d)-Oxidostearic acid**, II, 277.

**$\alpha$ -Oximinoketones**, synthesis from, of glyoxaline derivatives, II, 381.

**Oxnorcastadienol**, and its acetate, II, 198.

**Oxnorcastadienone**, and its derivatives, II, 198.

**Oxnorcastanone A and B**, and their derivatives, II, 198, 199.

**Oxonine**, oxidation-reduction of, II, 118.

**Oxycephaly**, and supernumerary teeth, III, 361.  
 treatment of, III, 789.

**Oxygen**, absorption of, by ether linkings, II, 376.  
 activation of, rôle of, in radiobiology, I, 304.  
 blood transport of, in fresh-water fish, III, 581.  
 breakdown potentials in, I, 8.  
 combination of, with hydrogen between second and third explosion limits, I, 101.  
 combustion of mixtures of hydrogen and, in presence of carbon monoxide, I, 300.  
 concentration of, in tissue, III, 514.  
 consumption of, effects of propylene glycol and other agents on, III, 632.  
 for man, rate measurement of, III, 474.  
 in vitamin-B<sub>1</sub>-deficiency, in rats, III, 909.  
 stimulation of, by 2:4-dinitrophenol in brain and kidney, III, 765.  
 cool-flame propagation in mixtures of nitrogen and, in presence of carbon disulphide, I, 101.  
 deprivation of, effect of age on respiration, spinal reflexes, pupillary responses, and heart action under, III, 375.  
 effect of, in high concentrations, on secondary shock, III, 206.  
 in plant culture, III, 652.  
 effect of low and high tensions of, on mental functioning, III, 101.  
 electric discharge in, glow, I, 31.

**Oxygen**, electric discharge in mixtures of, with nitrogen, I, 371.  
 with nitrogen and water vapour, I, 403.  
 equilibrium between, and haemoglobin, in urea solution, III, 736.  
 explosion limit of mixtures of hydrogen and, I, 66.  
 flames of carbon monoxide and, I, 101.  
 inflammability of mixtures of ethyl ether, helium, and, I, 102.  
 inhalation of, gaseous nitrogen elimination during, influence of body size on, III, 375.  
 inhibition of caecal and gastric peristalsis by, in rabbits, III, 607.  
 mask for, III, 101, 879.  
 intravenous administration of, III, 297.  
 ions, negative, I, 31.  
 isotopes of, I, 255.  
 lack of, in dental anaesthesia, III, 549.  
 liquid, X-ray diffraction by, I, 354.  
 pain control by injection of, III, 377.  
 poisoning by. See under *Poisoning*.  
 reactions of, with amalgams and hydrogen peroxide, I, 305.  
 with hydrogen, I, 68, 242, 369.  
 spark ignition of mixtures of hydrogen and, I, 66.  
 spectrum of, I, 309.  
 treatment with, effect of, on bile flow and urine in nembutalised dogs, III, 206.  
 equipment for, III, 735.  
 history of, and resuscitation, III, 515.  
 of eclampsia, III, 671.  
 of gas gangrene, III, 879.  
 uptake of, by brain suspensions, III, 518.  
 use of, in pneumatothorax, III, 207.

**Oxygen determination**:-  
 determination of, in gas mixtures, I, 306.

**Oxygen tent**, oxygen poisoning produced in, III, 879.

**Oxygenator**, for blood, III, 15.

**Oxyhaemoglobin**, acidified solutions of, oxidising effects of, on vitamin-C, III, 803.  
 crystal structure of, III, 873.  
 spectrum of, absorption, ultra-violet, I, 40.

**Oxyrenes**, diene syntheses with, II, 406.

**Oxytoxin**, action of, on ovulation in fowls, III, 810.

**Oxyuriasis**, and appendicitis, III, 457.

**Oysters**, biology and cultivation of, in Australia, III, 695.  
 determination in, of glycogen, III, 504.  
 male, stimulation of spawning in, III, 232.  
 See also *Ostrea virginica*.

**Ozone**, action of, on sputtered metals, I, 209.  
 as analytical reagent, I, 374, 377.  
 electrode potential of, I, 268.  
 flames of carbon monoxide and, I, 101.  
 formation of, by discharge in oxygen, I, 403.  
 by ultra-violet rays, I, 403.  
 electrical energy partition used in, I, 371.  
 electrolytically, anodic overvoltage and, I, 178.  
 in gaseous planetary nebulae, I, 253.  
 spectrum of, absorption, I, 351.  
 thermal decomposition of, in presence of nitrogen, I, 336.

**Ozonides**, decomposition of, with Raney nickel, II, 131.

## P.

**Pachyrrhizus angulatus**, constituents of, III, 951.

**Pædiatrics**, chemotherapy in, III, 627.  
 sodium chloride use and abuse in, III, 46.

**Paenoxacetic acid**, and its derivatives, II, 61.

**Paget's disease**, sclerotic areas in skulls affected with, III, 657.

**spinal cord complications** in, III, 211.

**Pain**, control of, by oxygen injection, III, 377.  
 due to cooling and "cold pressor" factors, III, 106.  
 from deep fascia, tendon, and periosteum, neurohistological basis for, III, 673.  
 nervous mechanism of, III, 881.  
 pelvic, relief of, by section of ovarian vessels and adjoining tissue, III, 885.

- Pain**, sensitivity to, apparatus for measurement of, III, 209.  
threshold of, effect of ethyl alcohol on, and on "alarm" reaction, III, 742.  
measurement of, in dogs, III, 51.
- Paints**, anti-fouling, plastic, mercury poisoning from use of, III, 713.  
water-soluble, silicosis in workers making, III, 55.
- Painting**, spray, with diluent gasoline, hazards in, III, 338.
- Palladium**, catalysts of higher polymerides and, I, 150.  
proton mobility in mixtures of, with hydrogen, I, 31.  
spectrum of, Zeeman effects in, I, 1.  
thermal expansion of, I, 167.
- Palladium detection and determination** :—  
detection of, by flotation, I, 341.  
detection and determination of, with *p*-nitroso-anilino-compounds, I, 115.  
determination of, microchemically, I, 279.  
spectrophotometrically, I, 377.  
with  $\beta$ -furfuraldoxime, I, 341.
- Palm oil**, carotenoids of, III, 950.
- Palmierite**, isotypism of, with whitlockite, I, 355.
- Palmit-*p*-aminoanilide**, II, 405.
- Palmitic acid**, sodium salt, solubility of, in organic liquids, I, 263.
- Palmitic acid**,  $\alpha$ -hydroxy-, *p*-bromophenacyl, *p*-nitrobenzyl, and phenacyl esters, II, 74.
- 1-Palmityl-2-naphthol**, II, 176.
- Palsy**, bilateral abducens, after lumbar puncture, III, 21.  
cerebral, in child, III, 218.  
Jamaica ginger, III, 883.
- Pan satyrus***. See Chimpanzee.
- Pancreas**, as organ of internal secretion, III, 382.  
calcification of, III, 528.  
deficiency in, congenital, trypsin for diagnosis of, III, 817.  
ducts of, ligation of, blood-enzymes after, III, 370.  
effect of, on nitrogen storage produced by pituitary preparations, III, 747.  
fistula of, III, 143.  
insulin content of, effect on, of oestrogens, III, 388.  
of pituitary, in rats, III, 598.  
of pituitary extract, III, 598.  
of thyroxine, in rats, III, 594.  
intestinal acid as stimulus for, III, 242.  
islets of Langerhans in, beta cells of, staining of, III, 660.  
cancer of, III, 230.  
changes in, induced by insulin dosage, III, 686.  
hyperplasia of, in partly depancreatized rat, III, 308.  
tumours of, pathology of, III, 521.  
movements of, III, 607.  
necrosis of, calcium and lipins in, III, 528.  
neuro-insular apparatus of, in mammals, III, 528.  
secretion of, after stimulant administration, in man, III, 241.  
effect on, of sympathomimetic amines, III, 746.  
in aged, III, 754.  
snake's, III, 508.  
structure of, effect on, of parotid extract, in rats, III, 511.  
surgically reduced, endocrine function of, III, 383.  
thymopolynucleotidase from, III, 777.
- Pancreatectomy**, partial, III, 143.  
and insulin concentration in pancreatic remnant, III, 686.  
pyruvic acid formation in, effect of insulin on, III, 686.
- Pancreatic extracts**, deproteinized, treatment with, of psoriasis, III, 817.  
See also Depropanex.
- Pancreatic juice**, in man, III, 317.
- Pancreatitis**, acute, aetiology of, III, 817.  
electrocardiograph changes in, III, 666.  
with fat necrosis, III, 242.
- Pancreatitis**, chronic, hyperfunction of Langerhans' islets in, III, 895.  
oedematous, acute, III, 242.
- Pandorina morum***, action of X-rays on, III, 714.
- Panhypopituitarism**, anterior. See Simmonds' disease.
- Pantothenic acid**, II, 217.  
absorption of, in anaemia, III, 662.  
analogues of, II, 250; III, 621, 778.  
as growth factor for bacteria, III, 60.  
biogenesis of, II, 250; III, 701.  
calcium salt, II, 77.  
crystalline, II, 133.  
content of, in royal jelly, III, 472.  
deficiency of, adrenal haemorrhage, cardiac failure, and kidney damage in relation to, III, 621.  
in dogs, III, 621.  
in rats, III, 832.  
morphological changes in, in mice, III, 254.  
determination of, in liver and yeast, III, 832.  
microbiologically, growth substances in, III, 910.  
effect of, on cancer growth, III, 150.  
on glucose utilisation by living and cell-free systems, III, 836.  
on growth inhibition by *N*-( $\alpha$ -di-hydroxy- $\beta$ -dimethylbutyryl)taurine, III, 61.  
on growth and life maintenance in mice, III, 254.  
on growth of micro-organisms, III, 851.  
esters, biological utilisation of, III, 621.  
in blood. See under Blood.  
in nutrition of pigs, III, 911.  
pharmacology and toxicity of, III, 169.  
requirement of, for mice, III, 471.  
synthesis of, and its derivatives, II, 132.  
urinary excretion of, III, 471, 472.
- d*-Pantothenic acid**, sodium salt, preparation and properties of, II, 132.
- Pantoyltaurine**, III, 779.
- Papain**, action of, on anti-pneumococcus antibodies, III, 177.  
on diphtheria antitoxin and on serum- $\phi$ -globulin, III, 936.  
on insulin digests, III, 936.  
digestion by, of meat, III, 269.  
preparation and uses of, III, 555.
- Papain- $\beta$ -trypsinase**, activation of, III, 716.
- Papaverine**, effect of, on dog's heart, III, 709.  
on fibrillation threshold of mammalian ventricles, III, 769.  
hydrochloride, effect of, on ventricular fibrillation, III, 411.
- Papaya**, papain from, III, 555.
- Papilla of Vater**, cancer of, III, 32.
- Papillae**, epidermal, development of, in chicks, III, 304.
- Papillo-macular bundle**, degeneration of, in apes, III, 586.
- Papilloma**, anti-serum, rabbit, analysis of, electrophoretically, III, 903.  
formation of, in benzpyrene-treated mice, III, 822.  
tissue, factor hydrolysing papilloma virus protein in, in rabbits, III, 697.
- Papilloma virus**, effect of X-rays on, III, 402, 825.  
in transplanted cancer, relation of, to papilloma immunisation and tumour cells, III, 697.  
protein, electron microscopy of, III, 903.  
neutralised, virus distribution in, III, 150.  
rabbit, electrophoresis of, III, 354.  
Shope, detection of, by immunisation, III, 615.
- Paracentrotus lividus***, gastrulation inhibition in, by cold, III, 507, 567.
- Parachors**, organic, I, 290.
- Para ciliaris retinae**, detachment of, III, 114.
- Para-Golgi apparatus**, III, 508.
- Paraffins**, absorption and emulsification of, in intestines, III, 456.  
alkylation of, in presence of aluminium chloride, II, 161.  
containing quaternary carbon, II, 185.  
See also under Hydrocarbons.
- Paraffins**, chloro-. See Chloroparaffins.  
nitro-. See Nitroparaffins.
- isoParaffins**, alkylation of, with olefines, II, 1.  
catalytic alkylation of, at low temperatures, II, 45.
- Paraffin wax**, blocks, cooling of, III, 8.  
trimmer for, III, 7.  
dielectric loss in solutions of, I, 322.
- Paragonite**, I, 252.  
synthesis of, I, 345.
- Paraldehyde**, poisoning by. See under Poisoning.
- Paralysis**, chastek, pathology of, in foxes, III, 378.  
cure of, with biotin, in rats, III, 832.  
due to late weaning, treatment of, with thiamin, in vitamin-*E*-deficient rats, III, 376.  
fowl, transmitting agent for, III, 179.  
general, iron origin in, III, 111.  
of diaphragm. See under Diaphragm.  
of insane, macroglial, microglial, and oligodendroglial counts in, III, 675.  
postdiphtheritic, effect on, of vitamin-*B*<sub>1</sub>, III, 19.
- Paralysis agitans**, pathogenesis of, III, 883.  
treatment of, surgical interruption of pallidofugal fibres in, III, 518.  
with vitamin-*B*<sub>6</sub>, III, 378.
- Paramagnetic substances**, thermodynamic functions of, I, 259.
- Paramecium***, effect on, of oxygen lack, III, 102.  
fragments of, mating reactions of, III, 659.  
klinokinesis of, III, 263, 421.  
metabolism in, effect of potassium and sodium on, III, 267.  
methylcholanthrene-adapted, cell division rate and population levels of, III, 397.
- Paramecium caudatum***, effect on, of carcinogenic agents, III, 823.  
mating types in, III, 659.  
metabolism of, III, 642.
- Paramecium multimicronucleata***, culture of, sterile, III, 717.
- Parasites**, distribution and incidence of, effect of temperature and moisture on, III, 323.  
internal, effect of diet on, in horses, III, 539.  
intestinal, diagnosis of, III, 754.  
malarial, pigment of, III, 436.  
pigment from. See Ferrihemate.
- Parathyroids**, deficiency of, behaviour and mood cycles in relation to, III, 744.  
gastric glands and, relation between, in dogs, III, 607.  
hormones of, effect of, on calcium and phosphorus metabolism, III, 595.  
insufficiency of, activated sterols in, III, 381.  
treatment of, with dihydrotachysterol, III, 521.  
of normal and hypophysectomised monkey, III, 660.  
of Virginia deer, at different seasons, III, 744.  
physiology and therapeutics of, III, 228.  
response parallelism of, with thyroid, to hormones, III, 593.  
secretion in, humoral control of, III, 808.  
size of, effect of pregnancy and diet on, in rats, III, 118.
- Parathyroid extracts**, bone salt mobilisation by, III, 118.  
effect of, on coagulation time in haemoptysis, III, 89.  
on phosphatase of rat femurs, III, 361.  
treatment with, of intracranial pressure in infants, III, 20.
- Parathyroidectomy**, calcium appetite in, treatment of, with vitamin-*D*, in rats, III, 306.
- Paratyphoid fever**, carriers of, treatment of, with iodophthalein and sulphapyridine, III, 706.  
in pigeons, III, 782.  
inoculation against, and its effect in serological diagnosis, III, 351.  
of Swiss soldiers, III, 560.  
outbreak of, III, 559.  
treatment of, with sulphapyridine, III, 706.
- Paredrine**, action of, on coronary vessels, III, 841.

- Parenchyma**, liver. See under Liver.
- Paresis**, facial, central, unilateral, emotional movement in, III, 883.  
post-diphtheric, urinary vitamin-B<sub>1</sub> content in, III, 700.
- Pargassite**, Mysore, I, 344.
- Parkinsonism**, alkaloidal treatment of, III, 19.  
post-encephalitic, treatment of, Bulgarian, III, 378.  
with belladonna, III, 883.  
treatment of, with belladonna, III, 212, 213.
- Parotid**, extract of, effect of, on blood-sugar and pancreas structure in rats, III, 511.  
histology of, of Indian elephant, III, 508.
- Parotitis**, post-operative, radiotherapy in, III, 929.
- Pars nervosa**. See under Pituitary.
- Parsley**, as source of vitamin-C, III, 702.
- Particles**, arrangements of, with number of neighbours, I, 388.  
counting of, I, 412.  
with slit ultramicroscopes, I, 116.  
dimensions of, measured viscosimetrically, I, 301.  
distribution function for, I, 287.  
elementary, field theories of, I, 80.  
infra-red reflexion and scattering by suspensions of, I, 185.  
forces on, I, 262.  
shower, angular distribution of, I, 5.  
size determination of, slides for, I, 412.  
spherical, absorption of light and radiant heat by, I, 9, 196.  
spin half, theory of, and Compton effect, I, 384.  
spinning, theory of, in Maxwell and meson fields, I, 5.
- $\alpha$ -Particles**. See  $\alpha$ -Rays.
- $\beta$ -Particles**. See  $\beta$ -Rays.
- Parturition**, lactation initiation at, III, 751.
- Passivity**, activation and passivation potentials in, I, 268.
- Pasteur effect**, III, 59, 173.  
aërobie phosphorylation in, III, 703.
- Pasturella pestis**, infection of chick embryos with, III, 346.
- Pasteurella pseudotuberculosis rodentium**, infection by, in man, III, 347.
- Pastures**, extracts of, for use in treatment of facial eczema, III, 787.  
See also Grass.
- Patch tests**, reactions to, III, 858.  
use of pyrex cups in, III, 785.
- Patent ductus arteriosus**. See Ductus arteriosus.
- Patent foramen primum**. See under Foramen primum.
- Patuletin**, and its derivatives, II, 202.
- Pavlov pouches**, Hollander and Jemerin method for making, III, 691.  
improved, preparation of, III, 815.
- Pea plants**, cow-, roots, changes in growing regions of, III, 275.  
garden, root-rot of. See *Aphanomyces euteiches*.  
nodules and roots of, assay of, III, 424.
- Peach trees**, mosaic virus on, incubation of, III, 650.  
yellow-red virus on, transmission of, III, 274.
- Peanuts**, proteins of, constituents of, II, 211.  
See also *Arachis hypogaea*.
- Peanut meal**, substitution of, for protein in hen's mash, and its effect on egg production, hatchability, and viability of chicks, III, 760.
- Pectins**, II, 187.  
chemistry of, II, 166.  
effect of, on intestinal bacilli, III, 852.  
metabolism of. See under Metabolism.  
nitration and denitration of, II, 352.  
non-accumulation of, injected into rabbits, III, 632.  
sols, structural viscosity of, I, 58.  
treatment with, III, 632.
- Pectolinارينginoside**, and its derivatives, II, 303.
- Pedicellin**, synthesis of, II, 10.
- Pedicularis graminum**, blastomeres of, spindle fibres and mitosis in, III, 84.
- Peduncles**. See under Brain.
- Pegmatites**, nepheline-syenite, Bearpaw Mts., Montana, I, 346.
- Peimine**, preparation and properties of, and its derivatives, II, 66.
- Peiminine**, preparation and properties of, and its derivatives, II, 66.
- Pellagra**, adrenal cortex atrophy in, III, 910.  
antibody response in, III, 831.  
excretion in, of specific fluorescent substances, III, 154.  
genesis of, III, 620.  
in cats, III, 329.  
in Great Britain since 1934, III, 328.  
in India, III, 40.  
in Kansas, III, 539.  
in Northern Ireland, III, 762.  
infantile, III, 40.  
prevention of, nicotinic acid requirement for, III, 910.  
skin histopathology in, III, 831.  
treatment of, with yeast- and muscle-adenylic acid in malnutrition, III, 539.
- Pelvimetry**, X-ray, instrument for, III, 933.
- Pelvis**, bony, and its influence on labour, III, 237.  
female, X-ray study of, in pregnancy, III, 281.  
fœtal, III, 1.  
human, irradiation of, bone absorption in, III, 486.
- Pemphigus**, electrolyte content and permeability of erythrocyte in, III, 571.  
eruption like, after sulphanilamide and sulphapyridine, III, 480.  
experiments with, III, 355.  
phytopharmacological index in, III, 355.  
treatment of, with serum from bullæ, III, 415.
- Penetrants**, "Tergitol," pharmacology of, III, 635.
- Penicillic acid**, III, 266.  
bacteriostatic action of, III, 267.
- Penicillin**, action of, III, 916.  
on enterococci and other streptococci, III, 344.  
chemotherapeutic activity of, III, 916.  
determination of, III, 778.  
potency of, tests for, III, 916.  
properties and purification of, III, 778.  
pure, biological properties of, III, 778.  
purification of, II, 276.  
response of sulphonamide-fast pneumococci to, III, 705.  
structure of, II, 276.
- Penicillium citrinum*, citrinin from, III, 174.
- Penicillium claviforme*, bactericidal substance formed by, III, 937.
- Penicillium cyclopium*, penicillic acid from, III, 266.
- Penicillium puberulum*, penicillic acid from, III, 266.
- Penicillium spinulosum*, spinulosin from, III, 420.
- Penicillium stipitatum*, metabolic product of, II, 242.
- Pentacenequinones**, reaction of, with Grignard reagents, II, 320.
- n-Pentadecane- $\eta$ -diol**,  $\theta$ -nitro-, II, 389.
- Pentadecic acid**,  $\xi$ -bromo-, and  $\xi$ -iodo-, and their methyl esters, II, 344.
- Pentadeuteropyrocatechol**, II, 282.
- $\beta$ -cyclopentadienyl- $\beta$ -phenyl- $p$ -bromopropiophenone**, II, 20.
- $\beta$ -cyclopentadienyl- $\beta$ -phenylpropionophenone oxime**, II, 20.
- Pentaerythritol**, amino-derivatives, II, 164.
- Pentaglycerol**, and its triacetate, II, 389.
- 2:3:4:5:6-Pentamethoxyacetophenone**, II, 10.
- 2:3:11:12:13-Pentamethoxyberberine**, II, 385.
- 2:3:4:5:6-Pentamethoxydibenzoylmethane**, II, 10.
- Pentamethylbenzenesulphonic acid**, amide and chloride of, II, 136.
- 3:5:8:4':5'-Pentamethylcannabiscitrin**, II, 48.
- Pentamethylene sulphide**, additive compounds of, with metallic halides, II, 328.
- 5:5-Pentamethylenebinret**, II, 329.
- 2:2-Pentamethyleneoxazolidine**, II, 394.
- Pentamethylenetetrazol**. See Cardiazol.
- 2:2-Pentamethylene-5:7:8-trimethylchroman**, 6-hydroxy-, and its allophanate, II, 268.
- Pentamethyl- $\Delta^5$ -cyclohexenone**, semicarbazone, II, 175.
- 3:5:6:3':4'-Pentamethyl-7- and -8-quercetagens**, II, 48.
- 1:2:3:4:6-Pentamethyl- $l$ -sorbose**, II, 251.
- 2:2:5:7:8-Pentamethylcetyl 3:5-dinitrophenylurethane**, II, 235.
- n-Pentane**, equilibrium of, with methane and propane, I, 367.  
reduction of methyl  $n$ -propyl ketone to, I, 25.  
thermodynamic properties of, I, 292.
- n-Pentane**, chloro-derivatives, dielectric properties, supercooling, and vitrification of, I, 289.  
 $\gamma\gamma$ -difluoro-, II, 294.
- isoPentane**, critical data and equilibrium of, mixed with propane, I, 358.  
heat capacity, entropy, heats of fusion and vaporisation, and vapour pressure of, I, 292.
- neoPentane**, reaction of, with bromine in presence of oxygen, II, 70.
- cycloPentane**, spectra of, Raman, and its mono-alkyl derivatives, I, 42.
- cycloPentane series**, II, 53, 345.
- Pentanes**, free energies and equilibria of isomerisation of, I, 175.
- Pentane- $\alpha\beta$ -dicarboxylic acid**,  $\epsilon$ -bromo-, II, 287.
- n-Pentane- $\alpha\epsilon$ -disulphonic acid**, and its  $m$ -toluidine salt, II, 129.
- Pentaphenylguanidine hydrochloride**, II, 169.
- 2-Pentathienyl**, and **dodecabromo-**, II, 61.
- Pentene**, isomerides, branched-chain, isomerisation equilibrium of, I, 144.
- $\Delta^4$ -Pentene**, addition of sulphur dioxide to, I, 301.
- cycloPentene**, octachloro-, I, 387.
- cycloPentenediol osmate**, II, 256.
- cycloPentenedithiazole**, 2-amino-, and its hydrochloride, II, 209.
- $\Delta^1$ -cycloPentenylicarbinol**, and its  $p$ -nitrobenzoate, II, 282.
- 1- $\Delta^3$ -Pentenylidenehydrindene**, II, 95.
- $\Delta^1$ -cycloPenteny- $\Delta^1$ -4-methoxycyclohexenyl-acetylene**, II, 171.
- 1- $\Delta^3$ -n-Pentenylcyclopentanol**, II, 85.
- $\Delta^3$ -n-Pentenyl- $\Delta^1$ -cyclopentene**, II, 85.
- $\alpha$ - $\Delta^1$ -cycloPenteny- $\beta$ -phenylpropionic acid**, and  $\alpha$ -cyano-, ethyl ester, II, 259.
- $\beta$ - $\Delta^2$ -cycloPentenypropionic acid**, II, 282.
- 4- $\beta$ - $\Delta^3$ -Pentenyl- $m$ -xylene**, II, 168.
- 4- $\gamma$ - $\Delta^3$ -Pentenyl- $m$ -xylene**, II, 168.
- Pentine**. See Pentinene.
- $\Delta^4$ -Pentinene**, addition of sulphur dioxide to, I, 301.  
spectrum of, Raman, I, 227.
- Pentobarbital**,  $p$ -bromo- and  $p$ -chloro-benzyl derivatives, II, 204.
- Pentoses**, determination of, with hydrobromic acid, II, 184.  
fermentation of, III, 175.
- Pentothal**, in human milk, III, 841.
- Pentothal sodium**, anæsthetic action of. See under Anæsthetics.  
dosage-mortality ratio of, with sulphanilamide, III, 632.  
hæmodynamic effect of, injected into man, III, 632.
- neoPentyl bromide**, acetylenic analogue of, II, 245.
- cycloPentylidenecyclopentanone**, 2:4-dinitrophenylhydrazine, II, 95.
- 1- $p$ - $\beta$ -cycloPentyl- $\beta$ -phenyl- $p$ -bromopropiophenone**, II, 20.
- cycloPentyl- $\beta$ -phenylpropionic acid**,  $di$ - $\alpha$ - $\alpha$ -1-cyano-, ethyl ester, II, 259.
- 4- $neo$ Pentyl- $m$ -xylene**, II, 168.
- Pepsin**, activity of, inhibition of, *in vitro*, III, 894.  
inactivation of, by iodine, III, 172.
- Pepsitensin**, produced by peptic digestion of proteins, III, 669.
- Peptic ulcers**. See under Ulcers.
- Peptidase**, serum-, activation of, III, 172.
- d-Peptidase**, in serum in cancer, III, 325.
- Peptides**, I, 204.  
esters, polycondensation of, II, 249.  
quantitative investigation of, I, 68; II, 165, 377.

- Peptides**, reaction of, with aldoses, I, 22.  
spectra of, absorption, ultra-violet, I, 194.
- Peptones**, determination of, in amino-acid mixtures and protein hydrolysates, III, 427.  
economy of, in wartime, III, 851.
- Peptone shock**, in rabbits, III, 632.
- Percaine**, anaesthesia with. See under Anaesthesia.
- Percorten**, action of, on steatorrhea, III, 230.
- Perezona**, antihemorrhagic activity of, III, 702.
- Perfusion apparatus**, III, 426.
- Periarteritis nodosa**, in children, III, 98.  
sigmoidoscopic diagnosis of, III, 296.
- Pericarditis**, constrictive, treatment of, medical and surgical, III, 877.  
rheumatic, with effusion, treatment of, with salicylates, III, 710.
- Pericardium**, calcification of, electrocardiographic changes in, III, 201.  
defective, with interatrial septum and pulmonary atresia, III, 281.
- Peridotite**, Madagascar, I, 252.
- Perinaphthane-7:8-dione**, and its derivatives, II, 262.
- Perinaphthen-7-one**, and its derivatives, and 8-bromo-, II, 262.
- Perinaphthen-7-one**, 8-hydroxy-. See Perinaphthane-7:8-dione.
- Periodates**. See under Iodine.
- Periodic system**, of compounds, I, 353.  
quantum numbers and, I, 256.  
radioactivity and, I, 255.  
revision of, I, 311.
- Perionyx excavatus**, regeneration in, III, 727.
- Periovarial sac**, in rats, III, 725.
- Peritonaeum**, infections of, treatment of, with sulphapyridine, III, 920.  
intestinal, structure of, in man, III, 285.
- Peritonitis**, pneumococcal, diagnosis and treatment of, III, 627.  
treatment of, with serum and sulphapyridine, III, 335.  
pre-operative use of amfetin in, III, 388.  
treatment of, with X-rays, III, 929.
- Peroline**, II, 182.
- Permeability**, membrane, I, 236, 325.
- Peromatus**, chromatin bridges in, III, 568.
- Peromyscus maniculatus**, cerebral cortex in, III, 739.
- Perophora annecteus**, iodine-storing tissue in, identity of, III, 704.
- Perosis**, diet in relation to, in chicks, III, 472.  
effect on, of dietary supplements, III, 906.  
of organic compounds, III, 827.  
prevention of, with biotin, III, 621.
- Peroxidase**, cytochrome-c, III, 418.
- Peroxides**, detection of, with luminol, I, 375.  
reduction of, to alcohols, II, 403.
- Perspez**, use of, in laboratory, I, 379.
- Perspiration**. See Sweat.
- Pertussis**, antibodies of, III, 853.  
detection of, by slide agglutination, III, 782.  
stimulation of, by vaccination, III, 493.
- anti-serum for**, prophylactic value of, III, 647.
- immunisation against**, and against diphtheria and tetanus, III, 781.
- immunity to**, after treatment with antitoxic serum, III, 272.  
spin test for, III, 782.
- murine**, effect on, of sulphadiazine, III, 628.
- treatment of**, with antigens, III, 647.  
with antipertussis rabbit serum, III, 176.
- vaccine for**, III, 493, 647.
- alum-treated immunisation with**, III, 782.  
prophylactic value of, III, 347.  
See also Whooping cough.
- Perylene**, and its derivatives, II, 262.
- Pes cavus**, familial, and absent tendon jerks, in relation to Friedreich's disease and muscular atrophy, III, 217.
- Petri dishes**, holder for, III, 656.
- Petrography**, of Central Montana, I, 160.
- Petrol**, aspiration of, effects of, in man, III, 843.  
toxicity of, III, 262.
- Petroleum**, Californian, naphthenic acid from, II, 225.  
sulphanilamido-derivatives of bases from, II, 424.  
distillates, nitrogen compounds in, II, 31, 328.  
fractions, solubilities of, in water, I, 359.  
origin of, I, 348.
- Petunia axillaris**, change from self-incompatibility to self-compatibility in change from diploidy to tetraploidy in, III, 432.
- Phaeochromocytoma**, treatment of, by surgery, III, 120.
- Phaeophytin**, formation of, in leaf organs, III, 424.
- Phagocytosis**, in sulphonamide solutions, by leucocytes, III, 918.  
radioactive thorium for study of, III, 89.
- Pharmacology**, synthesis of active products in, II, 398.
- Phascolosoma**, muscle of, electrolytes in, III, 375.  
histology of, III, 189.
- Phase rule**, in organic compounds, I, 240.
- Phase transitions**, I, 232.
- Phaseolus mungo**, seeds, succinoxidase of, III, 417.
- Pheidole morrisi**, origin of castes in, III, 900.  
See also Ants.
- Phenacetyl bromide**, 5-nitro-2-amino-, and its acetyl derivative, II, 17.  
bromides, 2:4:5- and 2:4:6-trichloro-, II, 99.
- $\alpha$ -Phenacyl- $\alpha$ -methyl-lauric acid**, II, 346.
- $\alpha$ -Phenacyl- $\alpha$ -methyl-octic acid**, II, 346.
- 1-Phenacylphenobarbital**, and 1-*p*-bromo-, II, 180.
- $\alpha$ -(Phenacylphenylmethyl)- $\beta$ - $\gamma$ - $\Delta^{\alpha\delta}$ -pentadienyl- $\beta$ -phenylethyl-*p*-bromophenyl ketone**,  $\alpha$ -*p*-bromo-, II, 20.
- 4:5:9':10'-Phenanthrathiopheno-2:3-2''-chloro-4':5''-tolazine**, II, 182.
- 4:5:9':10'-Phenanthrathiopheno-2:3-phenazine**.  
See Phenanthra-9'':10'':2':3'-thiopheno-4':5':2:3-quinoxaline.
- 4:5:9':10'-Phenanthrathiopheno-2'':3''-phenazine-azine**, II, 182.
- Phenanthra-9'':10'':2':3'-thiopheno-4':5':2:3-quinoxaline**, II, 182.
- 4:5:9':10'-Phenanthrathiopheno-2'':3''-quinoxaline-azine**, II, 182.
- Phenanthrene**, derivatives, synthesis of, II, 54.  
solubility of, I, 170.
- Phenanthrene**, 9-thiol-, and its derivatives, II, 179.
- Phenanthrenesulphonic acids**, electrical conductivities of aqueous solutions of, I, 175.  
viscosity of aqueous solutions of, I, 168.
- Phenanthrofurane series**, quinone dye of, II, 375.
- m*-Phenanthroline**, derivatives of, II, 206.
- 2-Phenanthrylacetone**, and its oxime, II, 318.
- 2-Phenanthryl-*tert*-butyl alcohol**, II, 318.
- $\alpha$ -9-Phenanthryldibenzyl**, II, 168.
- $\beta$ -2-Phenanthrylisopropyl alcohol**, II, 318.
- $\alpha$ -9-Phenanthrylstilbene**, and its derivatives, II, 168.
- Phenazine**, 1-nitro-, II, 424.
- Phenotele**, 3:4-diamino-, and its derivatives, and 3:4-dinitro-, II, 204.  
*p*-nitro-, f.p. of mixtures of diphenylamine with, I, 294.
- p*-Phenetylcarbamide**. See Dulcin.
- 4-*o*-Phenethylhydantoin**, II, 271.
- Phenobarbital**, derivatives, *N*-substituted, II, 180.  
determination of, in mixtures with theobromine, II, 44.  
effect of, on glucose tolerance, III, 412.
- Phenobarbitone**, effect of, on blood- and urine-ascorbic acid in man, III, 52.  
spectrum of, absorption, ultra-violet, II, 32.
- Phenol**, adsorption of, by sugar charcoal, I, 235.  
association of, with camphor, I, 22.  
content of, in human fluids and tissues, III, 756.
- Phenol**, *o*-chloro-, condensation of, with formaldehyde, II, 358.  
*o*- and *p*-chloro-, dipole moments of, I, 9.  
*o*-mono-, and 2:4-di-chloro-, action of formaldehyde on, II, 112.
- Phenol**, *pentachloro*-, determination of, spectrophotometrically, in tissues and water, III, 656.  
sodium salt, toxicity of, to fish, III, 772.
- chlorodiamino-derivatives**, and their dibenzoyl derivatives, II, 308.
- m*-fluoro-**, coupling of, with diazotised amines, II, 9.
- 3-fluoro-4-amino-**, II, 9.
- triiodo-**, chloroacetate, II, 88.
- 2:4-dinitro-**, effect of, on brain respiration in rats, III, 834.  
on liver-lipids of mice, III, 458.  
synergic action of, III, 54.
- o*-nitroso-**, use of, in colorimetric analysis, I, 340.
- Phenols**, acylation of, in presence of magnesium, II, 401.  
adsorption of, by fuller's earth, I, 295.  
condensation of, with ethyl  $\gamma$ -phenylacetoacetate, II, 326.  
with  $\alpha$ -substituted acetoacetates, II, 268.  
detection of, II, 432.  
determination of, bromometrically, II, 212.
- Pechmann condensation of**, with ethyl butyrate, II, 374.  
reaction of, with alkyl halides, II, 193.  
resin, II, 357, 402.
- Phenols**, halogeno-, chemotherapeutical use of, as disinfectants, III, 547.  
germicide action of, and their phenolates, III, 49.  
*m*-halogeno-, coupling of, with diazotised aniline, II, 308.
- polyhydroxy-**, esters, Fries migration of, II, 175.
- Phenol-alcohols**, reaction of, with amines and carbamide, II, 309.
- Phenol ethers**, fission of, by pyridine hydrochloride, II, 309, 340.  
by pyridinium salts, II, 357.  
halogenation of, I, 332.
- Phenol ethers**, nitro-, cathodic reduction of, II, 281.
- Phenol-red**, spectrum of, absorption, II, 153.
- Phenolphthalein**, tautomeric forms of, I, 194.
- Phenolsulphonaphthalein**, tautomeric forms of, I, 194.
- Phenothiazine**, anaemia after, III, 772.  
as anthelmintic, III, 414.  
determination of, colorimetrically, II, 184, 388.  
effect of, on worms in lambs, III, 631.  
f.p. of, I, 233.  
mixed with diphenylamine, I, 294.  
toxicity of, III, 415.  
to horses, III, 844.  
treatment with, of ascarid infestation in dogs, III, 415.  
of dracontiasis, III, 924.  
of equine strongylosis, III, 414.  
of parasitic gastritis, III, 415, 631.  
of pinworm disease, III, 631.
- Phenoxathiin**, f.p. of mixtures of diphenylamine with, I, 294.
- Phenoxyacetic acid**, 2:4-di- and 2:4:5-tri-chloro-, II, 93.  
2:4:6-triiodo-, II, 88.
- Phenoxyacetones**, II, 314.
- 4-Phenoxyacetophenone**, 4:4'-hydroxy-, and its derivatives, II, 261.  
 $\omega$ :4- and 3:4:4'-dihydroxy-, and their derivatives, II, 261.  
 $\omega$ :3:4:4'-trihydroxy-, triacetyl derivative, II, 261.
- $\gamma$ -Phenoxy-*n*-amyl-diethylamine**, 2:4:6-triiodo-, hydrochloride, II, 88.
- Phenoxybenzenedisulphonamide**, *p*-nitro-, II, 222.
- 4-Phenoxybenzenesulphonamide**, 4-*p*-nitro-, II, 222.
- 4-Phenoxybenzoic acid**, 4:4'-hydroxy-, and its derivatives, II, 260.  
3:4:4'-dihydroxy-, and its derivatives, II, 261.
- $\gamma$ -Phenoxy-*n*-butyric acid**,  $\gamma$ -*o*-iodo-, ethyl ester, II, 311.
- 2-Phenoxy-6-ethoxyepidrine**, II, 288.
- 4-Phenoxy-6- and -8-ethoxyquinaldines**, II, 288.
- $\beta$ -Phenoxyethyl bromide**,  $\beta$ -4-cyano-, II, 174.  
 $\beta$ -*o*-iodo-, II, 311.

- $\beta$ -Phenoxyethylamine, 4:4'-dicyano-, II, 174.  
 $\beta$ -Phenoxyethyldiethylamine, 2:4:6-triiodo-, salts of, II, 88.  
 $\gamma$ -Phenoxyethyl- $\alpha$ - $\beta'$ -phenylethyl-*n*-butyric acid, amide, II, 78.  
 $\delta$ -Phenoxy- $\alpha$ -ethyl-*n*-valeric acid, derivatives of, II, 78.  
 $\alpha$ -Phenoxy- $\Delta^8$ -hexadecenoic acid, and its ethyl ester, II, 346.  
 $\epsilon$ -Phenoxy- $\Delta^6$ -hexenoic acid, II, 287.  
 $\gamma$ -Phenoxy-*n*-hexyldiethylamine, 2:4:6-triiodo-, hydrochloride, II, 88.  
 $\alpha$ -Phenoxy- $\epsilon$ -ketopalmitic acid, ethyl ester, II, 346.  
2-Phenoxyepidrine, II, 288.  
5-Phenoxy-2-methoxybenzoic acid, and its ethyl ester, II, 261.  
2-Phenoxy-6-methoxyepidrine, II, 288.  
4-Phenoxy-6- and -8-methoxyquinolines, II, 288.  
 $\gamma$ -Phenoxyethyl-*n*-butyric acid, amide, II, 78.  
 $\epsilon$ -Phenoxy-pentane- $\alpha\beta$ -dicarboxylic acid, and its imide, and dibromo-, II, 287.  
 $\epsilon$ -Phenoxy-pentane- $\alpha\beta$ -tricarboxylic acid, and its triethyl ester, II, 287.  
 $\delta$ -Phenoxy- $\alpha$ - $\gamma'$ -phenoxypropyl-*n*-valeric acid, amide, II, 78.  
*dl*-4-Phenoxyphenylalanine, 3:5-di- and 3:5:3':5'-tetra-iodo-4:2'-hydroxy-, II, 94.  
 $\beta$ -3:5-diiodo-4-*m*-hydroxy-, and  $\beta$ -3:5-diiodo-4-(2':4'-diiodo-3'-hydroxy)-, II, 94.  
 $\gamma$ -Phenoxy- $\alpha$ -phenyl-*n*-butyric acid, amide, II, 78.  
4-Phenoxyphenylphosphinic acid, 3-amino-, 3-amino-4-*o*- and -*p*-chloro-, 3-nitro-, and 3-nitro-4-*o*- and -*p*-chloro-, II, 122.  
 $\beta$ -4-Phenoxyphenylpropionic acid,  $\beta$ -4:4'-hydroxy-, and its ethyl ester, II, 261.  
 $\alpha$ -*p*-Phenoxyphenyl-*n*-propyl alcohol, II, 223.  
 $p$ -Phenoxypropionophenone, II, 223.  
5- $\gamma$ -Phenoxy-*n*-propyl-5-ethylbarbituric acid, II, 151.  
4-Phenoxyquinoline, II, 287.  
4-Phenoxyquinoline, and its salts, II, 287.  
 $\kappa$ -Phenoxyundecic acid,  $\kappa$ -*o*-iodo-, and its ethyl ester, II, 311.  
Phenyl allyl ether, *m*-amino-, *m*-acetyl derivative, II, 281.  
2-*mono*-, and 2:6-di-chloro-, II, 283.  
 $\alpha$ -benzoylbenzhydryl sulphide, II, 172.  
butyl carbonate, 4-bromo-2-amino-, hydrochloride, and 4-bromo-2-nitro-, II, 119.  
*p*-carbamylphenyl ether, II, 173.  
4-cyanobenzyl ethers, 3- and 4-cyano-, II, 174.  
4-cyanophenyl ether, II, 173.  
4-cyano- $\beta$ -phenylethyl ether, 4-cyano-, II, 174.  
 $\alpha$ -dimethylallyl ether, II, 391.  
ethyl carbonate, 4-bromo-2-amino-, hydrochloride, II, 119.  
methoxymethyl ethers, nitro-, II, 281.  
methyl carbonate, 4-bromo-2-amino-, hydrochloride, and 4-bromo-2-nitro-, II, 119.  
nitrobenzoates, colour of, II, 258.  
*p*-nitrocinnamates and  $\beta$ -2:4-dinitrophenylpropionates, colour of, II, 310.  
nitrophenylethyl ether, 2-nitro-4-cyano-, II, 174.  
 $\beta$ -phenylethyl ether, 4-cyano-, II, 174.  
propyl carbonate, 4-bromo-2-amino-, hydrochloride, and 4-bromo-2-nitro-, II, 119.  
8-quinolyl ether, *p*-nitro-, II, 222.  
Phenylacetamide, 3-nitro-4-hydroxy-, II, 284.  
Phenylacetamidine, *p*-amino-, dihydrochloride, II, 173.  
2-Phenyl-1- $\beta$ -acetanilidovinylbenzthiazolium iodide, II, 239.  
Phenylacet-*n*-butylamide, I, 106.  
Phenylacetchloroamide, II, 217.  
Phenylacetic acid, ethyl ester, aminolysis of, in *n*-butylamine, I, 106.  
Phenylacetic acid, 3-chloro-4-hydroxy-, II, 284.  
 $\alpha$ -cyano-, and  $\alpha$ -cyano-*p*-iodo-, ethyl esters, II, 246.  
*p*-iodo-, nitration of, II, 257.  
 $\gamma$ -Phenylacetacetic acid, ethyl ester, condensation of, with phenols, II, 326.  
Phenylacetone, alkylation of, II, 221.  
Phenylacetyl chloride, hydrolysis of, I, 369.  
*m*-nitro-, II, 18.  
Phenylacetylacetic acid, methyl ester, II, 300.  
Phenylacetylcarbinol acetate, II, 327.  
Phenylacetylene, iodination of, in light of different frequencies, II, 45.  
 $\beta$ -Phenylacetylene,  $\alpha\beta$ -*p*-dibromo-, II, 14.  
 $\beta$ -Phenylacrylic acid,  $\beta$ -hydroxy-,  $\beta$ -benzoyl derivative, ethyl ester, II, 216.  
Phenylalanine, decomposition of, by ultra-violet light, III, 845.  
metabolism of. See under Metabolism.  
Phenylalanine, fluoro-derivatives, toxicity of, III, 163.  
*di*hydroxy-. See Dopa.  
*l*-Phenylalanine, physiological effect of, on pulsation of embryonic chick heart, III, 439.  
preparation of, from protein hydrolysates, II, 189.  
Phenylalanine-*N*-acetic acid, dimethyl ester, II, 425.  
*d*-Phenylalanine-*d*-leucine, II, 77.  
Phenyl alkyl ketones, hydrogenation of, in presence of alumina-copper catalysts, II, 223.  
 $\alpha$ -Phenyl-*n*-amyl alcohol, II, 224.  
3-Phenyl-2- $\alpha$ -isomylstyryl-2:3-dihydro-1:3:4-naphthoisotriazine-6-sulphonic acid, II, 427.  
Phenyl-*p*-anisylformazylbenzene, cobalt, cupric, and nickel complexes, II, 89.  
3-Phenyl-2-*p*-anisylphthalimide, II, 379.  
Phenylanisylvinylxanthylum perchlorate, II, 194.  
Phenylanisylxanthyleneallene, II, 194.  
*C*-Phenylanthranil, 4-nitro-*C*-*p*-chloro-, II, 289.  
Phenyl  $\beta$ -9-anthranylvinyl ketone, and *mono*-, *di*-, and *tri*-hydroxy-, and their derivatives, II, 284.  
Phenylarsenoxide, toxicity and treponemicidal activity of, effect of multiple substituents on, III, 634.  
Phenylarsenoxides, preparation of, II, 337.  
2-Phenylbenzdehydro-1:3-dioxan, 6:8-dichloro-, II, 112.  
*N*-Phenylbenziminocloride, *N*-4-cyano-, II, 174.  
*N*-Phenylbenziminocloride-4'-cyanophenyl ether, *N*-4-cyano-, II, 174.  
Phenyl-*p*-benzoquinone, *p'*-nitro-, II, 24.  
3- $\alpha$ -Phenyl- $\beta$ -benzoylflavanone, and its 2:4-dinitrophenylhydrazones, II, 327.  
 $\alpha$ -Phenylbenzoylmesitylene, and its derivatives, II, 315.  
1-Phenyl-1:2:3-benzotriazole-5-carboxylic acid, 7-bromo-, II, 425.  
3-Phenyl-5-benzylhydantoin-1-acetic acid, and its methyl ester, II, 425.  
*NN*-Phenylbenzylhydroxylamine, and its derivatives, and *N*-*p*-bromo-, II, 8.  
3-Phenyl-5-benzylidenehydantoin-1-acetic acid, ethyl ester, II, 425.  
3-Phenyl-5-benzylidenehydantoin-2-thiolacetic acid, ethyl ester, II, 425.  
3-Phenyl-5-benzylidenehydantoin-2-thiolphenylacetic acid, ethyl ester, II, 425.  
3-Phenyl-5-benzylidenehydantoin-2-thiol- $\alpha$ -propionic acid, ethyl ester, II, 425.  
*N*-Phenyl-*N'*-benzylthiocarbamide, II, 124.  
Phenyl-(5-bromo-2-aminophenyl)methylcarbinol, and its derivatives, II, 273.  
 $\alpha$ -Phenyl- $\alpha$ -(5-bromo-2-benzamidophenyl)ethylene, II, 273.  
3-Phenyl-5- $\alpha$ -bromobenzylidenehydantoin-1-acetic acid, ethyl esters, II, 425.  
 $\beta$ -Phenyl- $\beta$ -2:7-dibromo-9-fluorenyl-*p*-bromopropionophenone, II, 19.  
 $\delta$ -Phenyl- $\delta$ -2:7-dibromo-9-fluorenylbutan- $\beta$ -one, II, 19.  
 $\beta$ -Phenyl- $\beta$ -2:7-dibromo-9-fluorenylpropionophenone, II, 19.  
 $\alpha$ -Phenyl- $\delta$ -*p*-bromophenyl- $\Delta^{\alpha\gamma}$ -butadiene, II, 304.  
 $\alpha$ -Phenyl- $\delta$ -*p*-bromophenyl-*n*-butane,  $\alpha\beta\gamma\delta$ -tetra-bromo-, II, 304.  
 $\delta$ -Phenyl- $\alpha$ -*p*-bromophenyl- $\Delta^{\alpha}$ -*n*-butylene,  $\gamma\delta$ -dibromo-, II, 304.  
Phenyl-*p*-bromophenylformazylbenzene, cobalt, cupric, and nickel complexes, II, 89.  
isomerism of, II, 89.  
3-Phenyl-1-*p*-bromophenylpyrazole, II, 113.  
 $\gamma$ -Phenyl-*n*-butane,  $\beta$ -amino-, and its hydrochloride, II, 221.  
1-Phenylcyclobutane-1-carboxylic acid, derivatives of, II, 141.  
1-Phenylcyclobutane-2:3-dicarboxylic anhydride, II, 354.  
 $\beta$ -Phenylbutan- $\beta$ -ol, 3:5-dichloro-2-hydroxy-, II, 258.  
3:5-dichloro-4-hydroxy-, II, 283.  
5-Phenyl-5-butoxymethylbarbituric acid, II, 151.  
5- $\delta$ -Phenyl-*n*-butyl-5-ethylbarbituric acid, II, 151.  
 $\alpha$ -Phenylbutyric acid,  $\alpha$ -bromo-, II, 225.  
 $\beta$ -hydroxy-, and its ethyl ester, II, 404.  
 $\gamma$ -Phenylbutyric acid,  $\gamma$ -2:4-dihydroxy-, II, 198.  
 $\gamma$ -*p*-iodo-, and its ethyl ester, II, 311.  
 $\alpha$ -Phenylbutyryl bromide,  $\alpha$ -bromo-, II, 225.  
 $\alpha$ -Phenylbutyrylcarbamide,  $\alpha$ -bromo-, II, 225.  
Phenylcarbamic acid, *o*-, *m*-, and *p*-amino- and -nitro-, aryl esters, II, 401.  
Phenylcarbamide, 2:4-diiodo-, II, 88.  
9-Phenylcarbazole, metallation of, II, 122.  
*N*-Phenyl-*NN'*-(carbethoxycarbohydrazidovinylene)carbamide, and its derivatives, II, 271.  
Phenylcarbimide, reaction of, with sodium phenylacetylide, II, 280.  
*N*-Phenyl-6-chlorolepidylamine, and its nitroso-amine, II, 288.  
 $\gamma$ -Phenyl- $\alpha$ - and - $\beta$ -*p*-chlorophenylbutyric acids, II, 97.  
*N*-Phenylcholamide-*X*-sulphonamide, II, 146.  
Phenyleinchoninic acid, prevention of convulsions by, in rabbits, III, 710.  
4-Phenylcinnoline, 6-bromo-, and 6-chloro-4:4'-hydroxy-, and its benzoate, II, 273.  
 $\beta$ -Phenylcoumarilic acid, II, 108.  
 $\alpha$ -Phenylcrotonic acid, nitrogen derivatives of, II, 225.  
 $\alpha$ -Phenylcrotonylcarbamide, II, 225.  
 $\beta$ -Phenyl- $\alpha\beta$ -dialkylethylamines, II, 221.  
Phenyl di- $\beta$ -isomylaminoethyl ketone, hydrochloride, II, 224.  
5-Phenyl-1:5-diazo-(0, 2, 2)dicyclo- $\Delta^3$ -hexene-2:6-dione, II, 271.  
10-Phenyl-1:2:3:4-dibenzophenanthrene, II, 168.  
Phenyl- $\gamma$ -dibutylaminopropylcarbinol, II, 194.  
*N*-Phenyl-*NN'*-dicarbethoxyethenylcarbamide, and its derivatives, II, 271.  
2-Phenyl-1-dicarbethoxymethylenebenzthiazoline, II, 239.  
*N*-Phenyl-*NN'*-dicarbethoxyvinylene-carbamide, and *tetrabromo*-, II, 271.  
Phenyl- $\epsilon$ -diethylaminoamylcarbinol, II, 194.  
Phenyl- $\gamma$ -diethylaminopropylcarbinol, and its derivatives, II, 193.  
Phenyl- $\gamma$ -diethylaminopropyl ketone, and its hydrochloride, II, 193.  
Phenyldiguanidine, copper and nickel salts, II, 254.  
3-Phenyl-2:3-dihydrocoumarilic acid, II, 108.  
 $\alpha$ -Phenyl- $\alpha\beta$ -dihydrokaranjool, and its derivatives, II, 420.  
 $\beta$ -Phenyl- $\alpha\delta$ -dimesitylbutane- $\alpha\delta$ -dione, di-enolate, acrylation of, II, 144.  
 $\beta$ -Phenyl- $\alpha\delta$ -dimethyl- $\gamma$ -*tert*.-butyl-*n*-butane- $\alpha\delta$ -dione, II, 145.  
 $\beta$ -Phenyl- $\alpha\delta$ -dimesityl- $\gamma$ -*tert*.-butyl- $\Delta\beta$ -butylene- $\alpha\delta$ -dione, II, 145.  
 $\gamma$ -Phenyl- $\alpha\delta$ -dimesityl- $\Delta\beta$ -butylene- $\alpha\delta$ -dione,  $\beta$ -hydroxy-, II, 145.  
2-Phenyl-1- $\delta$ -*p*-dimethylaminophenyl- $\Delta^{\alpha\gamma}$ -butadienylbenzthiazolium salts, and 2-*o*- and 5-nitro-, II, 239.  
 $\alpha$ -Phenyl- $\alpha$ -dimethylaminophenyl- $\gamma$ -diethylaminophenylvinylcarbenium perchlorate, II, 194.  
3-Phenyl-2-*p*-dimethylaminophenylphthalimidine, II, 379.  
Phenyl- $\gamma$ -dimethylaminopropylcarbinol, II, 194.  
2-Phenyl-1-*p*-dimethylaminostyrylbenzthiazolium perchlorate, and 2-*o*-nitro-, II, 239.  
2-Phenyl-5:7-dimethyl-2-aza[2:3:1]dicyclo- $\Delta^6$ -octen-3-one-8-carboxylic acid, II, 150.  
2(or 3)-Phenyl-6:8-dimethylbenzopyran-3(or 2)-carboxylic acid, II, 374.  
2-Phenyl-5:7-dimethylbenzopyrylium chloride and picrate, 6-hydroxy-, II, 109.  
2-Phenyl-5:7-dimethylbenzopyrylium chloride, 6-hydroxy-2'-*p*-hydroxy-, II, 109.  
 $\gamma$ -Phenyl- $\beta\beta$ -dimethyl-*n*-butane,  $\gamma$ -*p*-amino-,  $\gamma$ -*p*-hydroxy-, and its  $\alpha$ -naphthylurethane, and  $\gamma$ -*p*-nitro-, II, 401.



- 2-Phenyl-5:7-dimethylchroman, 6-hydroxy-, II, 109.
- 2'-Phenyl-5:7-dimethylchroman, 6-hydroxy-2'-*p*-hydroxy-, II, 109.
- $\beta$ -Phenyl- $\epsilon\epsilon$ -dimethyl- $\gamma$ - $\beta'$ -dimethyl-*n*-propyl-*n*-hexan- $\beta$ -ol, II, 349.
- 1-Phenyl-3:5-(3'-3''-dimethyl-5':5''-isooxazolyl)-pyrazole, II, 384.
- $\beta$ -Phenyl- $\alpha\alpha$ -dimethylethylamine, II, 305.
- $\beta$ -Phenyl- $\alpha\alpha$ -dimethylethylcarbamide, II, 305.
- N*-Phenyldimethylglyoxalimum chlorides, *N*-2:4-dinitro-, II, 290.
- 6-Phenyl-3:4-dimethyl- $\Delta^3$ -cyclohexenylmethyl alcohol, and its naphthylurethane, II, 403.
- 3-Phenyl-4:6-dimethyl-1-hydrindone, and its derivatives, II, 329.
- 1-Phenyl-3:3-dimethylindan-1-ol-2-one, II, 22.
- $\gamma$ -Phenyl- $\beta\beta$ -dimethyl-*n*-pentane,  $\gamma$ -*p*-hydroxy-, and its  $\alpha$ -naphthylurethane, II, 402.
- $\beta$ -Phenyl- $\alpha\alpha$ -dimethylpropionamide, action on, of potassium hypobromite, II, 305.
- 1-Phenyl-2:3-dimethyl-5-pyrazolone-*X*-sulphonamide, II, 222.
- 5-Phenyl-1:3-dioxol-4-one, 5-*p*-bromo-, II, 421.
- Phenyldiphenacylmethane, 5-bromo-2-hydroxy-, benzyl derivative, 3:5-dibromo-2-hydroxy-, and its 2-benzyl derivative, and 3:5-dibromo-4-hydroxy-, II, 19.
- 5-Phenyl-1-diphenylbiuret, II, 329.
- 5-Phenyl-2:2-dithienyl, II, 62.
- 5-Phenyl-4:4-di-*o*-tolyl-2:2-dimethyl-1:3-dioxolan, II, 422.
- $\alpha$ -Phenyl- $\beta\beta$ -di-*o*-tolylethylene,  $\alpha$ -hydroxy-, acetyl derivative, II, 422.
- $\alpha$ -Phenyl- $\beta\beta$ -di-*o*-tolylethylene glycol, II, 422.
- Phenyl di-*o*-tolylmethyl ketone, II, 422.
- 5-Phenyl-2:3-di-*p*-tolyl- $\Delta^{2:1}$ -cyclopentadiene, II, 316.
- 9-Phenyldodecahydrophenanthrene-10-carboxylic acid, II, 320.
- Phenyldodecanes, II, 399.
- Phenyldodecenes, II, 399.
- meso-p*-Phenylenediaminomethylenecamphor, II, 325.
- p*-Phenylenediacetic acid, derivatives of, II, 359.
- $\alpha$ -Phenylenediamine, condensation of, with ethyl acetoacetate, II, 238.
- m*-Phenylenediamine, compounds of, with benzoic and salicylic acids, I, 52.
- Phenylenediamines, dipole moments of, I, 9.
- NN*-Phenylenedicarbamic acids, di-*o*-chloro-phenyl and phenyl esters, II, 401.
- p*-Phenylene-5:5'-di-(1-nitroso-3-pyrazolidone), II, 359.
- o*- and *p*-Phenylenediphthalamic acids, II, 361.
- NN*-Phenylenediphthalimides, II, 406.
- Phenylethanolamine, hyperglycemic action of, effect of *X*-rays on, in rabbits, III, 708.
- 5- $\beta$ -Phenylethylbenzthiazole, 6-nitro-, II, 153.
- 5-Phenyl-5- $\beta$ -ethoxyethylbarbituric acid, II, 151.
- 5-Phenyl-5-ethoxymethylbarbituric acid, II, 151.
- $\beta$ -Phenylethyl alcohol, effect of substituents on reactivity of hydroxyl in, II, 11.
- $\beta$ -Phenylethyl alcohol, *p*-amino-, and its derivatives, and *p*-iodo-, II, 11.
- $\beta$ -Phenylethyl bromide, 4-amino-, hydrochloride, and 4-cyano-, II, 174.
- 5- $\beta$ -Phenylethyl-5-allylbarbituric acid, II, 151.
- $\beta$ - $\alpha'$ -Phenylethylaminoethyl alcohol, and its picrate, II, 394.
- $\beta$ -Phenylethylaminoformic acid,  $\beta$ -chloro-,  $\omega$ : $\beta$ -dichloro-, and  $\beta$ -hydroxy-, ethyl esters, II, 189.
- 3-Phenyl-5- $\beta$ -2'-ethyl-1'-benzthiazolinylidene-vinylrhodamine, II, 155.
- 5- $\beta$ -Phenylethyl-5- $\beta$ -butoxyethylbarbituric acid, II, 151.
- $\beta$ -Phenylethyl- $\beta'$ -butoxyethylmalonic acid, II, 77.
- 5- $\beta$ -Phenylethyl-5-butybarbituric acids, II, 151.
- $\beta$ -Phenyl- $\alpha$ -ethyl-*n*-butyric acid, amide, II, 78.
- $\omega$ : $\beta$ -Phenylethylcamphene, and its derivatives, II, 266.
- 4-Phenyl-6-ethylcoumarin, 7-hydroxy-, and its acetyl derivatives, II, 109.
- 4-Phenylethylcoumarins, *mono*- and *di*-hydroxy-, and their derivatives, II, 202.
- ms*- $\beta$ -Phenylethyl-1:2:7:8-dibenzoxanthan, II, 375.
- ms*- $\beta$ -Phenylethyl-1:2:7:8-dibenzoxanthanium chloride, and its derivatives, II, 375.
- $\beta$ -Phenylethyl- $\gamma'$ -hydroxypropylamine, II, 301.
- 5- $\beta$ -Phenylethyl-5- $\beta'$ -ethoxyethylbarbituric acid, II, 151.
- $\beta$ -Phenylethyl- $\beta'$ -ethoxyethylmalonic acid, II, 77.
- 5- $\beta$ -Phenylethyl-5-ethoxymethylbarbituric acid, II, 151.
- $\alpha$ -Phenyl- $\gamma$ -ethyl- $\Delta^{\beta\epsilon}$ -hexadien- $\alpha$ -one, II, 99.
- $\alpha$ -Phenyl- $\gamma$ -ethyl-*n*-hexan- $\alpha$ -one, and  $\gamma$ -amino-, and its picrate, II, 99.
- $\alpha$ -Phenyl- $\gamma$ -ethyl- $\Delta^{\epsilon}$ -*n*-hexen- $\alpha$ -cne,  $\gamma$ -amino-, and its picrate, II, 99.
- 5- $\beta$ -Phenylethyl- $\beta'$ -cyclohexylethylbarbituric acid, II, 151.
- $\beta$ -Phenylethyl- $\gamma$ -hydroxypropylamine, and its picrate, II, 301.
- ms*-Phenylethylidene-1:2:7:8-dibenzoxanthan, and its perchlorate, and  $\alpha$ -1-bromo-, II, 375.
- 3-Phenyl-2-ethylindone, derivatives of, II, 364.
- 5- $\beta$ -Phenylethyl-5- $\beta'$ -methoxyethylbarbituric acid, II, 151.
- $\beta$ -Phenylethyl- $\beta'$ -methoxyethylmalonic acid, II, 77.
- 5- $\beta$ -Phenylethyl-5-methoxymethylbarbituric acid, II, 151.
- $\alpha$ - $\beta$ -Phenylethyl- $\beta$ -methyl-*n*-valeric acid, amide, II, 78.
- 5- $\beta$ -Phenylethyl-5- $\beta'$ -cyclopentylethylbarbituric acid, II, 151.
- 5- $\beta$ -Phenylethyl-5- $\beta'$ -phenoxyethylbarbituric acid, II, 151.
- $\beta$ -Phenylethyl- $\gamma'$ -phenoxypropylmalonic acid, II, 77.
- 5- $\beta$ -Phenylethyl-5- $\alpha'$ -phenylethylbarbituric acid, II, 151.
- 5- $\beta$ -Phenylethyl-5- $\gamma'$ -propoxy-*n*-propylbarbituric acid, II, 151.
- 5- $\beta$ -Phenylethyl-5-propylbarbituric acids, II, 151.
- 2- $\beta$ -Phenylethylpyridine, 5-cyano-6-hydroxy-, and 6-hydroxy-, II, 180.
- 2- $\beta$ -Phenylethylpyridine-5-carboxylic acid, II, 180.
- N'*- $\beta$ -Phenylethylsulphanilamide, and *N'*- $\beta$ -*p*-amino-, and *N'*- $\beta$ -*p*-nitro-, and their derivatives, II, 51.
- 2-Phenyl-1'-ethylthia-4'-carbocyanine, and 2-*o*-nitro-, perchlorates, II, 239.
- 2-Phenyl-1'-ethylthia-4'-cyanine iodide, II, 239.
- 2-Phenyl-1'-ethylthia-4'-cyanine, 2-*o*-nitro-, perchlorate, II, 239.
- 2-Phenyl-1'-ethylthia-4'-dicarbocyanine, 2-*o*-nitro-, perchlorate, II, 239.
- 3- $\beta$ -Phenylethyl-1:2:4-triazole, 5-hydroxy-, and its silver salt, II, 428.
- $\beta$ -Phenyl- $\beta$ -9-fluorenyl-*p*-bromopropiophenone, II, 19.
- $\beta$ -Phenyl- $\beta$ -9-fluorenylpropiophenone, II, 19.
- $\alpha$ -Phenyl- $\Delta$ -glucoside,  $\alpha$ -*o*-nitro-, II, 251.
- Phenylglucosides, preparation and rearrangement of, II, 251.
- Phenylglutaric acid, *p*-substituted derivatives, dissociation constants of, I, 328.
- Phenylglutaric acids, II, 284.
- Phenylglycine, 2:4-diiodo-, II, 88.
- Phenylglyoxal, reaction of, with carbamide and substituted carbamides, II, 379.
- Phenylglyoxalic acid,  $\beta$ -piperidinoethyl ester, hydrochloride, II, 237.
- $\lambda$ -Phenylheneicosane, II, 125.
- $\lambda$ -Phenyl- $\Delta$ -heneicosene, II, 125.
- Phenyl *n*-heneicosyl ketone, II, 85.
- $\gamma$ -Phenyl-*n*-heptane,  $\gamma$ -*p*-hydroxy-, and its  $\alpha$ -naphthylurethane, II, 402.
- 2-Phenyl-*n*-heptanoic acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- $\gamma$ -Phenylheptolactone, II, 257.
- $\epsilon$ -Phenyl-*n*-hexacosane, II, 85.
- $\epsilon$ -Phenyl- $\Delta^{\epsilon}$ -*n*-hexacosene, II, 85.
- $\gamma$ -Phenyl- $\alpha\gamma$ -hexamethyltriaminotriphenylvinyl-carbenium perchlorate, II, 194.
- $\gamma$ -Phenyl-*n*-hexane,  $\beta$ -amino-, and its hydrochloride, II, 221.
- $\gamma$ -*p*-hydroxy-, and its  $\alpha$ -naphthylurethane, II, 402.
- 1-Phenylcyclohexane-1-carboxylic acid, derivatives of, II, 141.
- $\alpha$ -Phenyl-*n*-hexan- $\alpha$ -one,  $\gamma$ -imino-, II, 98.
- 3-Phenylcyclohexanone, 3-*p*-hydroxy-, and its derivatives, II, 57.
- $\beta$ -Phenyl- $\Delta^{\alpha}$ -*n*-hexenoic acid,  $\alpha$ -cyano-, ethyl ester, II, 133.
- $\alpha$ -Phenyl-*n*-hexoic acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- $\gamma$ -Phenyl-*n*-hexoic acid, lactone, and  $\gamma$ -hydroxy-, II, 257.
- $\epsilon$ -Phenyl-*n*-hexoic acid,  $\epsilon$ -*p*-iodo-, and its ethyl ester, II, 311.
- $\alpha$ -Phenyl-*n*-hexyl alcohol, II, 224.
- $\alpha$ -Phenyl- $\alpha$ -cyclohexylacet- $\beta$ -morpholinoethylamide, II, 335.
- 5- $\zeta$ -Phenyl-*n*-hexyl-5-ethylbarbituric acid, II, 151.
- Phenyl-*p*-cyclohexylphenylsulphone, II, 358.
- N'*-Phenyl-*N'*-isohexylthiocarbamide, II, 124.
- 4-Phenylhydantoin, 4-*o*-chloro-, and 4-*m*- and *p*-hydroxy-, II, 271.
- Phenylhydrazine, characterisation of organic acids with, II, 215.
- oxidation of, by cupric salts, I, 368.
- treatment with, of aortic aneurysm, III, 513.
- 3- $\epsilon$ -Phenyl-2- $\alpha$ -hydroxybenzylcyclopropane-1- $\alpha$ -carboxylic acids, and their derivatives, II, 312, 313.
- $\alpha$ -Phenyl- $\beta$ -2-hydroxy-3:5-dimethylbenzylhydrazine, II, 309.
- 3-Phenyl-2-(3'-hydroxy-4'-methoxyphenyl)-2:3-dihydro-1:3:4-naphthoisotriazine-6-sulphonic acid, II, 427.
- $\alpha$ -Phenyl- $\alpha$ -(2'-hydroxy-5'-methylphenyl)ethyl-ene,  $\alpha$ -5-chloro-2-amino-, and its derivatives, II, 273.
- 3-Phenyl-1-hydroxymethyl-1:2:3:4-tetrahydroquinazol-4-one, II, 205.
- Phenylimidocarbonic acid, and *p*-bromo-, and *p*-nitro-, phenyl and tolyl esters, II, 169.
- $\alpha$ -2-Phenyl-3-indolyl- $\alpha$ -2'-phenyl-3'- $\beta$ -indolidene-ethane, II, 377.
- 2-Phenyl-4:3:5'-diiodo-4'-*m*-anisoxylbenzylidene-oxazol-5-one, II, 94.
- 1-Phenylisatin, reaction of, with magnesium phenyl bromide, II, 423.
- Phenylketonuria, genetics of, III, 431.
- N*-Phenyl-lepidylamine, II, 288.
- $\alpha$ -Phenyl- $\delta$ -mesitylbutane- $\alpha\delta$ -dione, II, 148.
- $\alpha$ -Phenyl- $\delta$ -mesitylbutane- $\alpha\delta$ -dione,  $\alpha$ -*p*-bromo-, II, 148.
- $\alpha$ -Phenyl- $\delta$ -mesitylbutan- $\alpha$ (or  $\delta$ )-ol- $\delta$ (or  $\alpha$ )-one, II, 148.
- cis*- and *trans*- $\alpha$ -Phenyl- $\delta$ -mesityl- $\Delta\beta$ -butylene- $\alpha\delta$ -diones,  $\alpha$ -*p*-bromo-, II, 148.
- 2-Phenyl-5-mesitylfuran, II, 148.
- 2-Phenyl-5-mesitylfuran, 2-*p*-bromo-, II, 148.
- 5-Phenyl-5- $\beta$ -methoxyethylbarbituric acid, II, 151.
- 2-Phenyl-1-methylbenzthiazolium iodide, II, 239.
- N*-Phenyl-*N'*-methylbenzthiocarbamides, II, 124.
- $\gamma$ -Phenyl- $\gamma$ -methylbutane,  $\beta$ -amino-, and its hydrochloride, II, 221.
- Phenylmethylbutylacetic acid, derivatives of, II, 93.
- 4-Phenyl-7-methylcoumarin, 6-hydroxy-, and its acetate, II, 202.
- 4-Phenyl-8-methylcoumarin, 7-hydroxy-, II, 420.
- $\gamma$ -Phenyl- $\alpha$ -methyl- $\alpha$ -*n*-decylbutyrolactones, II, 346.
- 2-Phenyl-5-methyl-1:3-dioxan, 5-amino-, and 5-nitro-, II, 111.
- $\beta$ -Phenyl- $\gamma$ -methyl-*n*-heptane,  $\beta$ -*p*-hydroxy-, and its  $\alpha$ -naphthylurethane, II, 402.
- $\alpha$ -Phenyl- $\gamma$ -methyl- $\Delta^{\beta\epsilon}$ -hexadien- $\alpha$ -one, II, 98.
- $\beta$ -Phenyl- $\gamma$ -methyl-*n*-hexane,  $\beta$ -*p*-hydroxy-, and its  $\alpha$ -naphthylurethane, II, 402.
- $\delta$ - and  $\epsilon$ -Phenyl- $\beta$ -methyl-*n*-hexanes,  $\delta$ - and  $\epsilon$ -*p*-hydroxy-, and their  $\alpha$ -naphthylurethanes, II, 402.
- $\alpha$ -Phenyl- $\gamma$ -methyl-*n*-hexan- $\alpha$ -one,  $\gamma$ -amino-, and its picrate, II, 98.
- $\alpha$ -Phenyl- $\gamma$ -methyl- $\Delta^{\beta}$ -*n*-hexen- $\alpha$ -one, and its 2:4-dinitrophenylhydrazones, II, 99.
- 4-Phenyl-3-methylhydantoin, II, 379.
- 3-Phenyl-6-methyl-1-hydrindone, II, 329.
- N*-Phenylmethylideneimine, *N*-*o*-thiol-, II, 210.
- 3-Phenyl-2-methylindone, derivatives of, II, 364.

- $\alpha$ -Phenyl- $\gamma$ -methyl- $\Delta^6$ -*n*-octin- $\gamma$ -ol, II, 246.  
 $\beta$ -Phenyl- $\gamma$ -methyl-*n*-pentane,  $\beta$ -*p*-hydroxy-, and its  $\alpha$ -naphthylurethane, II, 402.  
 $\delta$ -Phenyl- $\beta$ -methyl-*n*-pentenoic acid,  $\alpha$ -cyano-, ethyl ester, II, 133.  
 $\epsilon$ -Phenyl- $\gamma$ -methyl- $\Delta^6$ -*n*-pentin- $\gamma$ -ol, II, 246.  
4-Phenyl-1-methylpiperidine-4-carboxylic acid, ethyl ester. See Demerol and Dolantin.  
2-Phenyl-5:5-*N*-methylphenylencarbamyl-3:4:2':3'-indolo-2:5-dihydrofuran, 2-hydroxy-, II, 64.  
 $\alpha$ -Phenyl- $\beta$ -methyl- $\beta$ -propenyl glycol, dehydration of, II, 224.  
1-Phenyl-5-methylpyrazole-3-carboxylic acid, 1:2':4'-dinitro-, II, 298.  
2-Phenyl-4-methylquinoline, 6:2-5'-dinitro-2'-amino-, II, 16.  
5-Phenyl-4-methylthiazole, and its derivatives, II, 290.  
9-Phenyl-2-methylthioxanthene, 7-nitro-, II, 63.  
9-Phenyl-2-methylthioxanthanol, 7-nitro-, and its derivatives, II, 63.  
 $\alpha$ -Phenyl- $\delta$ -methyl-*n*-valeric acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.  
9-Phenylperinaphthan-7-one, synthesis of, II, 21.  
1-Phenylperinaphthenone, II, 22.  
2-Phenyl-naphtho-1':2'-4:5-triazole, oxidation of, II, 428.  
*N*-Phenyl-*N'*- $\beta$ -naphthylacetamide, II, 63.  
 $\alpha$ -Phenyl- $\beta$ -1-naphthylacrylic acid, and its picrate, II, 98.  
 $\beta$ -Phenyl- $\alpha$ -1-naphthylethylene,  $\alpha$ -bromo- $\beta$ -2:4-dinitro-, and  $\beta$ -2:4-dinitro-, and its dibromides, II, 98.  
Phenyl-naphthylformazylbenzenes, cobalt and nickel complexes, II, 89.  
isomeric, II, 89.  
*N*-Phenyl-*N'*- $\beta$ -naphthylmethylthiocarbamide, II, 124.  
 $\beta$ -Phenyl- $\beta$ -1-naphthylpropionic acid,  $\beta$ -hydroxy-, ethyl ester, II, 22.  
 $\theta$ -Phenylonatrialene, II, 175.  
 $\beta$ -Phenyl- $\Delta^7$ -noninen- $\beta$ -ol,  $\alpha$ -chloro-, II, 295.  
 $\beta$ -Phenyl- $\Delta^7$ -*n*-octenoic acid,  $\alpha$ -cyano-, ethyl ester, II, 133.  
 $\gamma$ -Phenyl-octolactone, II, 257.  
 $\alpha$ -Phenyl-*n*-octyl alcohol, II, 224.  
2-Phenylloxazole, and 2-*o*-amino- and -nitro-, and their derivatives, II, 335.  
1-Phenyl-5:5-pentamethylenebisuret, II, 329.  
 $\gamma$ -Phenyl-*n*-pentane,  $\beta$ -amino-, and its hydrochloride, II, 221.  
1-Phenylcyclopentane-1-carboxylic acid, derivatives of, II, 141.  
3-Phenyl-1- $\Delta^6$ -pentenylidenehydrindene, II, 95.  
*p*-Phenylphenacyl bromide, sulphonium derivatives of, II, 284.  
mercaptan, II, 284.  
*p*-Phenylphenacyldialkylsulphonium salts, II, 284.  
*p*-Phenylphenacyldialkylsulphonium salts, II, 284.  
*p*-Phenylphenacyldibutylsulphonium salts, II, 284.  
*p*-Phenylphenacyldiethylsulphonium salts, II, 284.  
*p*-Phenylphenacyldimethylsulphonium salts, II, 284.  
*p*-Phenylphenacyldipropylsulphonium salts, II, 284.  
*p*-Phenylphenacylmethylbutylsulphonium salts, II, 284.  
*p*-Phenylphenacylmethylethylsulphonium salts, II, 284.  
*p*-Phenylphenacylmethylpropylsulphonium salts, II, 284.  
1-*p*-Phenylphenacylphenobarbital, II, 180.  
2-Phenyl-3:9'-phenanthrylidone, II, 168.  
3-Phenyl-2-phenylethyl-2:3-dihydro-1:3:4-naphthoisotriazine-6-sulphonic acids, II, 427.  
*anti*-Phenyl phenylthiolmethyl ketoxime, II, 285.  
Phenylphosphinic acid, 3-amino- and 3-nitro-4-hydroxy-, II, 122.  
Phenylphthalamic acid, II, 361.  
Phenylphthalide, II, 379.  
3-Phenylphthalide-3-carboxy-*p*-aniside, II, 379.  
3-Phenylphthalide-3-carboxylamide, II, 379.  
3-Phenylphthalide-3-carboxylanilide, II, 379.  
3-Phenylphthalide-3-carboxymethylamide, II, 379.  
3-Phenylphthalimidine, 3-cyano-, and its acetate, II, 379.  
3-Phenylphthalimidine-3-carboxylic acid, and its methyl ester, II, 379.  
Phenyl- $\gamma$ -piperidinopropylcarbinol, and its hydrochloride, II, 193.  
 $\omega$ -Phenylpolyenealdehydes, preparation of, II, 175.  
Phenylpropionic acid, *p*-bromo-, and its methyl ester, II, 14.  
 $\alpha$ -Phenylpropionic acid,  $\beta$ -hydroxy-, 3-piperidino-ethyl ester, methobromide, II, 237.  
 $\beta$ -Phenylpropionic acid, 2:4-dinitro-, aryl esters, II, 311.  
 $\beta$ -Phenylpropionoxyacetic acid,  $\beta$ -*p*-iodo-, ethyl ester, II, 311.  
Phenyl propoxymethyl ketones, II, 300.  
 $\alpha$ -Phenyl-*n*-propyl alcohol, II, 224.  
3-Phenyl-2-*n*-propyl-2:3-dihydro-1:3:4-naphthoisotriazine-6-sulphonic acid, II, 427.  
1-Phenylpyrazoline, substituted derivatives, II, 19.  
1-Phenylpyrazol-5-one-3-propionic acid, amide and methyl ester, II, 426.  
2-Phenylpyrrole-1-carboxylic acid, ethyl ester, II, 115.  
2-Phenylpyrrolidine-1-carboxylic acid, ethyl ester, II, 115.  
1-Phenylpyrrol-5-one-2-acetic acid, ethyl ester, II, 426.  
Phenylpyruvic acid, *p*-hydroxy-, degradation of, in relation to liver function, III, 457.  
 $\delta$ -Phenylsemicarbazide, *p*-nitro-, and 2:4-dinitro-, and their derivatives, II, 88, 169.  
Phenylstearic acid, iodo-, ethyl ester, II, 311.  
Phenyl styryl ketone, 2-bromo-5-nitro-, and its 2:4-dinitrophenylhydrazone, II, 16.  
nitrohydroxylamino-, oxime, II, 16.  
Phenyl styryl ketones, substituted, II, 19.  
Phenylsuccinic acid, *o*-chloro-, anilide, II, 259.  
*p*-chloro-, II, 97.  
Phenylsuccinic anhydride, *p*-substituted derivatives, reactivity of, with aromatic hydrocarbons, II, 97.  
*N'*-Phenylsulphanilamide, *N'*-2':4'-diiodo-, II, 88.  
*N*-Phenyl-*N'*-*p*-sulphonamidophenyl-*C*-methylformazan, II, 289.  
2-Phenyl-3-*p*-sulphonamidophenyl-5-methyl-tetrazolium chloride, II, 289.  
3-Phenyl-1:2:3:4-tetrahydroquinazolin-4-one, and 3-*p*-bromo-, II, 205.  
 $\gamma$ -Phenyl- $\alpha\alpha$ -tetramethyldiaminodiphenylallene, II, 194.  
 $\alpha$ -Phenyl- $\alpha\gamma$ -tetramethyldiaminodiphenylvinyl-carbenium perchlorate, II, 194.  
 $\alpha$ -Phenyl- $\beta\delta\zeta$ -tetramethyl- $\delta$ -*tert*-butyl-*n*-heptane- $\alpha$ -dione, II, 349.  
 $\alpha$ -Phenyl- $\beta\delta\zeta$ -tetramethyl- $\delta$ -*tert*-butyl-*n*-heptane- $\alpha$ -ol- $\gamma$ -one, II, 349.  
1-Phenyl-3-2'-thienyl-4-methylpyrazoline, II, 236.  
10-Phenylthioacetamidomethyl-1:2-benzanthracene, II, 11.  
Phenylthiocarbamide, action of, on tyrosinase, III, 935.  
bitter-tasting, toxicity of, III, 552.  
oxidation of, with copper and iron salts and iodine, II, 254.  
Phenylthiocarbamides, II, 37, 254.  
2-Phenylthiol-9:10-anthraquinone, 1:4-dihydroxy-, and 1:4-dihydroxy-2-*o*-nitro-, II, 24.  
4-Phenylthiolanthraquinone, 1:2:5:8-tetrahydro-4-*o*-nitro-, II, 24.  
1-Phenylthiolbenzthiazole, and its ethiodide, II, 154.  
2-Phenylthiol-1:4-naphthaquinol, and 2-*o*-nitro-, II, 24.  
4-Phenylthiol-1:2-naphthaquinol, 4-*o*-nitro-, II, 24.  
2-Phenylthiol-1:4-naphthaquinone, II, 24.  
Phenylthiolquinol, *o*-nitro-, II, 24.  
Phenylthiourea. See Phenylthiocarbamide.  
3- $\alpha$ -Phenyl- $\beta$ -*p*-toluylethylflavanone, and its 2:4-dinitrophenylhydrazone, II, 327.  
 $\beta$ -Phenyl- $\gamma$ -*p*-tolylbutyric acid, II, 97.  
 $\alpha$ -Phenyl-*o*- and -*p*-tolyl- $\delta\delta$ -dimethyl- $\beta$ - $\beta'$ -dimethyl-*n*-propyl-*n*-pentan- $\alpha$ -ones, II, 349.  
 $\alpha$ -Phenyl- $\alpha$ -*p*-tolylethylene glycol, and its benzoate, II, 174.  
Phenyl-*p*-tolylformazylbenzene, cobalt, cupric, and nickel complexes, II, 89.  
3-Phenyl-4-*p*-tolyl-6-methylcoumarin, II, 109.  
3-Phenyl-4-*p*-tolyl-6-methylflavylum salts, II, 109.  
Phenyl-*N*-*o*-tolylnitron, 2:4-dinitro-, II, 361.  
Phenyl-*N*-*m*-tolylnitron, 2:4-dinitro-, II, 362.  
 $\eta$ -Phenyl- $\Delta^6$ -tridecadi-in- $\eta$ -ol, II, 246.  
 $\mu$ -Phenyltridecahexaenal, II, 175.  
Phenyltrimethylammonium methosulphate, *m*-hydroxy-, dimethylcarbamate, II, 358.  
salts, *o*-, *m*-, and *p*-nitro-, II, 221.  
Phenyltrimethylarsonium salts, *m*-amino-, 3-amino-4-hydroxy-, *p*-bromo-, 4-bromo-3-amino-, 4-bromo-3-nitro-, *m*-hydroxy-, *m*-nitro-, and 3-nitro-4-hydroxy-, II, 121.  
 $\alpha$ -Phenyl- $\delta\zeta$ -trimethyl- $\delta$ -*tert*-butyl-*n*-heptane- $\alpha$ -dione, II, 349.  
Phenyl-2:4:6-trimethyl- $\alpha$ -*d*-glucoside, effect on, of almond emulsin, III, 641.  
Phenylundecioic acid, bromo-, and iodo-, ethyl esters, II, 311.  
Phenylureidophenylalanine-*N*-acetic acid, dimethyl ester, II, 425.  
Phenylurethane, *p*-nitro-, II, 169.  
 $\alpha$ -Phenyl-*n*-valeric acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.  
 $\gamma$ -Phenylvaleric acid, lactone, and  $\gamma$ -hydroxy-, II, 257.  
 $\gamma$ -Phenylisovaleric acid,  $\alpha$ -cyano-, ethyl ester, II, 133.  
 $\beta$ -Phenyl- $\gamma$ -vinyl- $\Delta^2$ -pentenyl *p*-bromophenyl ketone, II, 20.  
Pheochromocytoma, III, 596.  
Philodendron. See *Scandens cardatum*.  
*Phlebotomus papatasi*, transmission of *Leishmania tropica* by bite of, III, 344.  
Phlegmasia alba dolens, thrombophlebitis contrasted with, III, 296.  
Phlogopite, Sljudjanka, I, 348.  
4-Phloracetophenone glucoside tetraacetate, II, 352.  
Phloridzin, effect of, on glucose phosphorylation of kidney cortex extracts and on phosphatase activity, III, 717.  
*p*-Phloridzin, and its hepta-acetate, II, 352.  
Phloroglucinolaldehyde 2:4-diacetate, II, 149.  
Phloroglucinol, detection of mercuric compounds with, I, 278.  
Phloroglucinoldialdehyde, II, 260.  
Phloroglucinolsuccinein, II, 119.  
Pholedrine in major operations, III, 842.  
Phorbides, chloro-derivatives of, II, 181.  
Phorbide-aldehydes, reactions of, II, 207.  
*iso*Phorone, reaction of, with magnesium methyl bromide, II, 12.  
Phosgene. See Carbonyl chloride.  
poisoning by. See under Poisoning, carbonyl chloride.  
Phosphagen, aerobic breakdown and resynthesis of, in rabbit's heart, III, 333.  
Phosphatases, "acid," determination of, in serum, effect of erythrocyte-phosphatase on, III, 11.  
acid and alkaline, distribution of, in tumours, normal tissues, and tissues of tumour-bearing rats and mice, III, 698.  
activity of, effect of phloridzin on, III, 717.  
alkaline, constitution of, III, 173.  
from horse kidneys, preparation and purification of, III, 173.  
in relation to adrenal cortex, III, 936.  
bovine, spectrum of, absorption, ultra-violet, III, 848.  
determination of, III, 504.  
kidney, separation of, III, 490.  
liver, in normal rats and those on diet containing aminoazotoluene, III, 318.  
mammary gland, extraction and purification of, III, 173.  
plant, III, 936.  
potato, inhibitors of, III, 936.  
Phosphates. See under Phosphorus.  
Phosphate rock, determination in, of fluorine, I, 339.  
Phosphatides, tissue. See under Tissues.  
Phosphides, chemistry of, I, 374.  
Phosphoglucomutase, III, 936.

- Phospholipins**, as energy source for spermatozoa motility in bulls, III, 316.  
ether-insoluble, in blood and tissues, III, 612.  
formation of, by brain and nerve, III, 738.  
in visual purple solutions, III, 113.  
oxidation of, in presence of ascorbic acid and carcinogenic chemicals, III, 255.  
inhibition of, by carcinogenics, III, 35.  
serologically-active, purification of, from ox heart, III, 577.  
solubility of, effect of digitonin on, III, 462.  
synthesis and breakdown of, in liver, III, 318.
- Phosphomolybdic acids**, structure, formation, and properties of, I, 275.
- Phosphonitrilic compounds**, II, 430.
- Phosphopeptide**, decomposition of, by enzymes, III, 848.
- Phosphopeptones**, from digestion of caseinogen, III, 902.
- Phosphopyruvic acid**, synthesis of, in muscle tissue, III, 45.
- Phosphors**, alkali halide and silicate, decay of phosphorescence of, I, 315.  
alkaline-earth sulphide, structure of, I, 335.  
cadmium and zinc sulphides, effect of flux on, I, 352.  
chromium, spectra of, I, 315.  
crystals, excitation of, by corpuscular rays, I, 31.  
fluorescence of, I, 195.  
in inert gases, I, 257.  
gelatin-dye, conductivity of, I, 352.  
light absorption in, I, 132.  
negatively polarised emission of, I, 132.  
silicate, luminescence of, I, 42.  
strontium sulphide, loss of efficiency of, I, 226.
- Phosphorescence**, history and applications of, I, 164.  
in rigid media, I, 82.
- Phosphorescent substances**, purification of, by chromatographic adsorption, I, 334.
- Phosphorus**, isotopes, radioactive, absorption of, in irradiated and non-irradiated mice, III, 475.  
in rats, III, 456.  
distribution of in dental enamel, III, 334.  
effect of, on blood of monkeys, III, 370.  
on lymphocytes in dogs, III, 197.  
in blood. See under Blood.  
phosphorus metabolism of tissue fractions after dosage with, in mice, III, 158.  
properties of, I, 383.  
retention of, in tissues after death from leukemia, III, 46, 572.  
treatment with, of neoplastic disease, III, 616.  
uptake of, by liver and tumours, III, 159.  
metabolism of. See under Metabolism.  
poisoning by. See under Poisoning.  
 $\gamma$ -rays from, bombarded by protons, I, 33.  
serum-. See under Blood-serum.  
white, liquid and solid, heat of fusion and heat capacities of, I, 292.  
thermal energy of, I, 226.
- Phosphorus compounds**, absorption of, from intestines, III, 143.  
balance of, in laying birds, III, 827.  
biochemical influence of, and potassium, III, 258.  
effect of, on dietary fluorine assimilation, III, 405.  
on lead metabolism, III, 468.  
formation of, in egg yolk, III, 543.  
in blood. See under Blood.  
in liver. See under Liver.  
retention of, in children with renal insufficiency, III, 321.  
in relation to growth and osseous development, III, 45.  
in relation to nitrogen retention, III, 326.  
seasonal requirements of, for cattle, III, 760.  
solutions of, effect of administration of, in rabbits, III, 333.
- Phosphorus dichloronitrides**, vapour pressures of, I, 200.  
pentafluoride, refractive index of, I, 165.
- Phosphorus halides**, radio-halogen exchange in, I, 305.  
trihalides, electric moments of, in dioxan, I, 234.  
trihydride, m.p.-pressure curve of, I, 89.  
reaction of, with chloramine-T, I, 181.  
paranitride, heat of formation and depolymerisation of, I, 298.  
pentoxide, complexity of, I, 89.  
determination of, by potentiometric titration, I, 339.  
thiofluoride, preparation and properties of, I, 210.
- Phosphoric acid**, rôle of, in dehydrogenation processes, III, 836.
- Phosphoric acids**, condensed, and their alkali salts, I, 405.
- Phosphates**, acid, isotope effect on crystal structure of, I, 260.  
basic, of bivalent metals, I, 246.  
determination of, by molybdenum-blue reaction, I, 112.  
colorimetrically, I, 71, 408.  
in coloured effluents, etc., I, 184.  
meta-, ortho-, poly-, and pyro-, in presence of each other, I, 375.  
with uranyl acetate, I, 339.  
equilibrium of, between plasma and saliva, III, 455.  
rôle of, in cellular assimilations, III, 333.  
toxicity of, for normal and adrenalectomised rats, III, 595.  
viscosity of solutions of potash and, I, 52.
- Orthophosphoric acid**, determination of, acidimetrically, I, 183.
- Orthophosphates**, detection of, by drop reactions, I, 375.
- Phosphorous acid**, dissociation constants of, I, 297.
- Hypophosphites**, determination of, by potassium permanganate, I, 248.  
fission of, indicated by deuterium, I, 246.
- Phosphorus organic compounds**, II, 122, 430.
- Phosphoric acid**, esters, action on, of hydrogen peroxide, II, 185.  
treatment with, of fractures, III, 566.
- Phosphorus determination**—  
determination of, by Lorenz's method, I, 277.  
in biological material, III, 504.  
in lipin extracts, III, 428.  
inorganic, III, 504.  
with photo-electric colorimeter, III, 724.  
spectrophotometrically, I, 183.
- Phosphoryl triamides**, I, 406.
- Phosphorylase**, equilibrium of, in relation to  $pH$ , III, 641.  
potato, action of, II, 251.
- Phosphorylation**, aerobic, rôle of, in Pasteur effect, III, 703.  
disturbance of, after adrenalectomy, III, 888.
- Phosphotungstic acid**, structure and properties of, I, 22.
- 1-Phospho-9-tungstic acid**. See Luteophosphotungstic acid.
- 1-Phospho-12-tungstic acid**, structure, properties, and formation of, I, 275.
- Photo-activity of solids**, I, 108.
- Photo-cathodes**, composite, foreign metals in, I, 29.
- Photochemical processes**, reversible, in rigid media, I, 82.  
reactions, inhibition of, and dark reactions, by inorganic compounds, I, 208.  
studies, I, 109, 179.
- Photo-electric colorimeters**. See under Colorimeters.  
effect, at sensitised metal surfaces, I, 84.  
recorder, III, 656.  
surfaces, recorder for spectral sensitivity of, I, 117.
- Photo-electrons**, Geiger-Müller counters for, I, 281.
- Photographs**, X-ray, dark room for film processing of, III, 487.  
indexing of, I, 354.  
reprinting by, in presence of rare-earth minerals, I, 69.
- Photographic action**, of canal rays, I, 69.  
developers, autooxidation of, in presence of silver, I, 403.  
development, adsorption in, I, 19.  
for long lengths of film, etc., III, 183.  
emulsions, tracks of nuclear particles in, I, 80.  
exposure, effect of light absorption on, I, 372.  
effect of temperature on, I, 372.  
images, latent, optical and X-ray, mercury sensitisation of, I, 308.  
quanta to form, I, 68.  
layers, transmission of, ultra-violet, I, 351.  
photometry. See under Photometry.  
plates, contrast and wave-length curve for, I, 249.  
exposure of, to electrons, I, 373.
- Photography**, extreme ultra-violet, by luminescent screens, I, 156.  
in spectrographic analysis, I, 156.  
of spectra, I, 155.  
X-ray, screening in, III, 487.
- Photoluminescence**, polarisation of, I, 7.
- Photometers**, I, 28.  
micro-, I, 157, 341, 342, 411.  
photo-electric, prism and sector, I, 156.
- Photometry**, I, 250.  
in spectrochemical analysis, I, 117.  
photographic, of stars, I, 307.
- Photomicrography**, chromatic aberration in, I, 156.  
exposure time in, III, 656.  
increasing depth of focus in, I, 155.
- Photons**, counters for, for ultra-violet spectra, etc., I, 2.  
formation by, of cosmic rays, I, 223.  
helical motion of, I, 256.  
X-ray, efficiency of multiplier tubes for, I, 75.  
showers produced by, and by electrons, I, 223.
- Photo-neutrons**, scattering of, by atomic nuclei, I, 4.
- Photophoresis**, I, 222.
- Photosensitisation**, by solids, I, 178.
- Photosensitivity** studied by skin tests, III, 170.
- Photosynthesis**, III, 277.  
by water plants in thermal springs, III, 276.  
depression of, by carbon dioxide, III, 359.  
in flashing light, III, 276.  
in relation to chlorophyll formation, III, 74.  
in relation to light intensity, III, 73.  
quantum efficiency of, III, 424.
- Phototropic compounds**, magnetic study of, I, 392.
- Photovoltaic effect**, I, 258.
- Phoxinus phoxinus*, sex reversal in, III, 125.
- Phrenic nerve**. See under Nerves.
- o-Phthaldehyde**, solutions of, as reagent for glycine, II, 68.
- isoPhthalaldehyde**, 5-chloro-4-hydroxy-, and its derivatives, II, 358.
- Phthaldehydes**, synthesis of, II, 227.
- Phthaleins**, absorption of, by cadmium sulphide, I, 108.
- Phthalhydrazide**, 3-amino-, chemiluminescence of, II, 332.
- Phthalic acid**, and its salts, polarography of, I, 242.  
toxicity of, and its derivatives, to mice, III, 771.
- Phthalic acid**, 3-amino-, and 3-nitro-, esters of, and their derivatives, as anaesthetics, II, 14.  
4-amino-, and 4-nitro-, esters of, and their derivatives, as anaesthetics, II, 14.  
3:5-di-hydroxy-, II, 260.
- Phthalic anhydride**, condensation of, with primary amines in acetic acid, II, 406.  
reaction of, with azoimide, in presence of sulphuric acid, II, 360.  
with resorcinol derivatives, II, 198.
- Phthalimidoacetoneitrile**, II, 182.
- Phthalimidoacet-thioamide**, II, 182.
- 4'-Phthalimidodiphenylsulphone**, 4-amino-, II, 140.
- 8-Phthalimido-6-methoxyquinoline**, II, 31.
- 2-Phthalimidomethyl-4-diethylaminomethyl-thiazole**, II, 182.
- Phthalimido-o-nitrophenacylmalonic acid**, diethyl ester, II, 362.
- Phthaloperin-10-one**, II, 406.

- Phthiocol**, synthesis of, and its homologues, II, 410.
- Phycocyanin**, photosynthesis by, III, 500.
- Phycomyces**, growth of, action on, of ancurin and its derivatives, III, 174.
- of thiazole, III, 60.
- promoted by hypoxanthine, III, 642.
- growth substances for, III, 420.
- Phycomyces blakesleeanus**, growth of, medium for, III, 420.
- Phyllochlorin**, methyl ester, derivatives of, II, 208.
- Phylloerythrin**, 1-chloro-, methyl ester, and its oxime, II, 181.
- Phylloporphyrin**, hydroxy-, and its benzoyl derivative, methyl esters, II, 289.
- Phyllotaxis**, whorled, III, 785.
- Phymata**, dietary study on, quantitative, III, 826.
- Phymatotrichum omnivorum**, effect of ammonium salts on, III, 948.
- Physics**, applications of X-ray absorption spectra in, I, 254.
- atomic, I, 128.
- borderline problems in, III, 263.
- electromagnetic theory in, I, 256.
- laws and definitions in, I, 200.
- nuclear, applications of, I, 192, 343.
- Physical constants**, theoretical values of, I, 381.
- development, relation between mental development and, III, 217.
- fitness, of children, III, 657.
- handicaps, economic, medical, and social problems involving, III, 322.
- types, delineation of, Burt's multiple general factor analysis applied to, III, 792.
- Physico-chemical processes** in biological systems, III, 341.
- Physiological solution**, new, III, 510.
- Physiology**, human, under high pressure, III, 514.
- Physostigmine**. See *Eserine*.
- Phytase** in plants, III, 936.
- Phytenal**, II, 348.
- Phytozooids**, formation of, with persimmons *in vitro*, III, 527.
- Phytolacca americana**, berries, pharmacology and phytochemistry of, III, 501.
- " **$\beta$ -Phytolapachone**," and its quinol diacetate, II, 149.
- Phytosterols**, oxidation of, II, 286.
- 2-Phytylnaphthazarin**, II, 149.
- 3-Phytyl-1:4-naphthazarin**, 2-hydroxy-, and its quinol triacetate, II, 149.
- Picene**, degradation of, II, 25.
- Picric acid**, equilibrium of, with anthracene, I, 398.
- silver salt, use of, in sinus infections, III, 481.
- treatment with, of vaginitis, III, 708.
- Picrotoxin**, treatment with, of barbiturate poisoning, III, 52.
- N-Picryl-1:4-dimethylglyoxalium chloride**, II, 290.
- Picryl-2-methylthiazole**, II, 290.
- N-Picryl-2-methylthiazolium chloride**, II, 290.
- Picrylthiazole**, II, 290.
- Pigs**, fat of, composition of, effect of sex on, III, 34.
- newly-born, hypoglycemia in, III, 11.
- potassium requirement of, III, 907.
- riboflavin deficiency in, III, 328.
- stillbirth in, causes and control of, III, 814.
- See also *Swine*.
- Pigeons**, crop-sacs and viscera of, response variation of, to prolactin, III, 310.
- Pigments**, cellular, absorption coefficient of, III, 934.
- determination of, with spectrocomparator, III, 724.
- echinoderm. See under *Echinoderms*.
- formation of, by fungi, III, 490.
- dianine metabolism and, III, 916.
- indigoid, from glyoxalines, II, 117.
- rattlesnake. See under *Rattlesnakes*.
- scattering of light by, I, 9.
- Pilocarpine**, analogue of, II, 240.
- sweating test with, III, 221.
- synergistic action of, on salivary secretion, III, 481.
- Pilots**. See under *Aviation*.
- d-Pimaric acid**, determination of, in resin acids, II, 276.
- l-Pimaric acid**, oxidation of, and its adduct with quinone, II, 107.
- Pinacol**, oxidation of, by periodate, I, 243.
- Pinacolonylbarbituric acids**, II, 32.
- Pinacolonyltartaric acid**. See  $\gamma$ -Koto- $\beta$ -dimethylpentane- $\alpha$ -dicarboxylic acid,  $\alpha$ -hydroxy-.
- Pinacolyl alcohol**, olefines from, I, 403.
- Pine disease**, effect of cobalt on, in Northumbrian sheep, III, 327.
- Pineal gland**, innervation of, beginning of, in chick embryos, III, 228.
- ox, implantation of, in rat, effect of, III, 521.
- Pinealoma**, III, 307.
- Pineapples**, bromelin from, III, 555.
- Pineane magnesium chloride**, camphanecarboxylic acids from, II, 369.
- $\alpha$ -Pinene**, synthesis of, II, 147.
- $\beta$ -Pinene**, oxidation of, by selenium dioxide, II, 324.
- reactions of, II, 178.
- $\alpha$ - and  $\beta$ -Pinenes, conversion of, to bornyl acetate and to camphene, II, 59.
- isomerisation of, vapour-phase, II, 178.
- Pinene glycol osmiat**, II, 256.
- d- $\beta$ -Pinenecarboxylic acid**, and its derivatives, II, 148.
- Pinocamphone**, synthesis of, II, 147.
- Pinocarovone**, 2:4-dinitrophenylhydrazone, II, 178.
- Pinonic acid**, synthesis of, II, 147.
- Pinta**, III, 850.
- Pinus excelsa*, *khasya*, *longifolia*, and *merkussi***, turpentine oils from, II, 59.
- Pinworms**. See *Enterobius vermicularis* and under *Worms*.
- Piperidine-3-acetic acid**, methyl ester, acetate, II, 203.
- 3- $\omega$ -Piperidinoacetamidocarbazole**, and its dihydrochloride, II, 63.
- 5- $\omega$ -Piperidinoacetamidoquinoline**, II, 63.
- 8- $\omega$ -Piperidinoacetamidoquinoline**, II, 63.
- 2-Piperidinobenzophenone**, 5-nitro-, II, 63.
- 1-Piperidinobenzthiazole ethopercchlorate**, II, 155.
- 1- $\beta$ -Piperidino-4 $\gamma$ -butadienylbenzthiazole ethiodide**, II, 155.
- $\beta$ -Piperidino- $\alpha$ -di-*n*-alkylaminopropiophenone dihydrobromides**, II, 113.
- $\beta$ -Piperidino- $\alpha$ -diethylaminopropiophenone dihydrobromide**, II, 113.
- $\beta$ -Piperidino- $\alpha$ -dimethylaminopropiophenone dihydrobromide**, II, 113.
- $\gamma$ -Piperidino- $\gamma$ -dimethyl- $\Delta^5$ -octen- $\alpha$ -ol**, and its picrate, II, 301.
- $\beta$ -Piperidino- $\alpha$ -di-*n*-propylaminopropiophenone dihydrobromide**, II, 113.
- 2-Piperidino-4-ethoxyquinoline**, II, 378.
- $\beta$ -Piperidinoethyl alcohol**, esters of, mydriatic, II, 237.
- 1- $\zeta$ -Piperidino-4 $\gamma$ -hexatrienylbenzthiazole ethiodide**, II, 155.
- 9-Piperidinomethylcarbazole**, II, 205.
- Piperidinomethylcarvacrol**, and its hydrochloride, II, 205.
- Piperidino-4'-methylidiphenylsulphones**, nitro-, II, 49.
- Piperidinomethylnaphthols**, and their hydrochlorides, II, 205.
- $\alpha$ -Piperidinopentan- $\gamma$ -ol**, and its derivatives, II, 301.
- dl-, d-, and l-Piperidinopropane- $\beta$ -diols**, and their derivatives, II, 301.
- 3- $\beta$ -Piperidinopropionamidocarbazole**, and its dihydrochloride, II, 63.
- Piperidinopropionamidoquinolines**, II, 63.
- 5- $\beta$ -Piperidinopropionamidoquinoline**, and its dipicrate, II, 63.
- 6- $\omega$ -Piperidinoquinoline**, and its dihydrochloride, II, 63.
- $\alpha$ -Piperidino- $\beta$ -tetrahydroquinolino- $\beta$ -phenylpropiophenone**, II, 149.
- 1- $\beta$ -Piperidinovinylbenzthiazole ethiodide**, II, 155.
- 4(5)- $\beta$ -Piperidylglyoxaline**, and its salts, II, 381.
- dl- $\beta$ -2-Piperidylpropaldehyde diethylacetal**, II, 38.
- Piperitenone**, physical constants of, I, 388.
- preparation of, and its ultra-violet absorption spectrum, II, 416.
- n*- and *iso*-Piperitenones** in pennyroyal oil, III, 862.
- Piperitone**, physical constants of, I, 388.
- Piperitone oxide**, betaines and tertiary bases from, II, 408.
- Piperonal**, condensation of, with amides, II, 16.
- Piperonal, 6-nitro-**, condensation of, with amides, II, 16.
- Piperonylamine picrate**, II, 76.
- Piperonylanilide**, II, 405.
- Piperonylbenzylamide**, II, 405.
- Piperonylbutylcarbinyl ether**, II, 54.
- Piperonyl-p-chloroanilide**, II, 405.
- Piperonylcyclohexylamide**, II, 405.
- Piperonylideneacetone semicarbazone**, II, 31.
- Piperonylidenediacetamide**, and 6-nitro-, II, 16.
- Piperonylidenedibenzamide**, and 6-nitro-, II, 16.
- Piperonylidenedi-*n*-butyramide**, and 6-nitro-, II, 16.
- Piperonylidenedicinnamamide**, and 6-nitro-, II, 16.
- Piperonylidenedi-*n*-heptoamide**, and 6-nitro-, II, 16.
- Piperonylidenediphenylacetamide**, and 6-nitro-, II, 16.
- Piperonylidenedipropionamide**, and 6-nitro-, II, 16.
- 3-Piperonylidene-1-methyloxindole**, 3-6'-amino-, and its acetyl derivative, II, 331.
- Piperonylideneoxindole**, 6-amino-, and its diacetyl derivative, II, 326.
- Piperonyl- $\alpha$ - and - $\beta$ -naphthalides**, II, 405.
- $\alpha$ -Piperonyl- $\Delta^4$ -pentene**, II, 54.
- Piperonyl-p-toluidide**, II, 405.
- Pipettes**, attachment for, for dangerous liquids, etc., I, 187.
- capillary, I, 213.
- precision, for volumetric gas analysis, III, 951.
- precision calibration of, I, 281.
- quadruple, automatic, I, 187.
- rinsers and washers for, III, 502.
- small, mechanical manipulator for, III, 951.
- wash-out, I, 213.
- Pipitzahoe acid**. See *Perezone*.
- Piriformis muscle**. See under *Muscle*.
- Pitressin**, antidiuretic action of, III, 810.
- effect of, on renal circulation and urine secretion, III, 889.
- on sodium chloride excretion, III, 124.
- tannate, treatment with, of diabetes insipidus, III, 599.
- treatment with, of intestinal flatulence, III, 608.
- Pituitary**, adenoma of, in relation to lactation, III, 889.
- anterior, cytology of, in fowls, III, 867.
- cytology and histology of, effect of oestrogen implantation on, in immature rats, III, 596.
- diabetogenic substance of, serological protection against, III, 598.
- effect of, on immature female mice, III, 230.
- on protein metabolism, III, 123.
- effect on, of light, in rats, III, 125.
- of testosterone propionate in old male rats, III, 383.
- fibrillar tissue changes of, associated with age in rats, III, 792.
- gonad-stimulating activity of, in relation to reproductive conditions in hens, III, 748.
- hormones of, co-operation of, with follicular hormone, III, 312.
- effect of thyroidectomy on, in goats, III, 122.
- growth, III, 123.
- effect of, on cretinism, III, 310.
- on endochondral ossification, III, 889.
- on swine, III, 522.
- treatment with, of dwarfs, III, 310.
- luteinising, release of, by acetylcholine-like substance from hypothalamic region, III, 384.

**Pituitary, anterior, hormones of, nomenclature of, III, 124.**  
 in carbohydrate metabolism of eviscerated rats, III, 747.  
 in relation to mammary gland, III, 29.  
 mammosenic lobule-alveolar growth factor of, bioassay of, III, 123.  
 mitotic activity in, III, 507, 596.  
 preparations of, changes in fat percentage and yield of dairy cows after, III, 526.  
 "growth" and diabetogenic action of, III, 383.  
 thyrotropic potency of, in mice, III, 597.  
 carmine-cell reaction inhibition in, in cats, III, 599.  
 castration changes in, effect of steroids on development of, in rats, III, 812.  
 cells, changes in, in rats, after exposure to light or darkness, III, 868.  
 Golgi material in, of rats, III, 432.  
 chicken, bioassay of, for gonadotropic potency, III, 748.  
 development of, melanophore-dispersing hormone assay during, in chicks, III, 310.  
 diabetogenic action of, III, 686.  
 effect of, on growth of rats, III, 309.  
 on pancreatic diabetes, in toads, III, 231.  
 on preputial glands of female rats, III, 384.  
 on resistance to low temperatures, III, 746, 809.  
 effect on, of deoxycorticosterone, III, 27.  
 of irradiation, III, 809.  
 function of, thymus mediation of, III, 808.  
 gonadotropic activity of, III, 124.  
 effect of oestrogen substitution on, III, 525.  
 in anti-gonadotropic serum-treated rats, III, 748.  
 growth of, thyrotropic content during, in rabbits, III, 122.  
 growth-substance from, effect of, on development of rats thyroidectomised at birth, III, 123.  
 histo-chemistry of, III, 286.  
 histology and physiology of, of progesterone-treated rats, III, 309.  
 hormones of, adrenocorticotrophic, effect of, on insulin hypoglycaemia and liver glycogen in adrenalectomised mice, III, 121.  
 changes in, in rabbits after mating, III, 598.  
 effect of, on neurone proliferation, III, 214.  
 gonadotropic, III, 124.  
 growth and thyrotropic, synergism between, III, 809.  
 interstitial cell-stimulating, biology of, III, 810.  
 physico-chemistry of, from sheep, III, 599.  
 lactogenic, effect of pregnancy on, III, 231.  
 luteinising and thyrotropic, separation of, III, 27.  
 melanophore, III, 599.  
 oxytocic, and urine secretion, III, 889.  
 oxytocic and pressor factors of, arginine, cystine, and tyrosine content of, III, 810.  
 thyroid-stimulating, physiology of, III, 597.  
 hypertrophy of, due to oestradiol, age factor in, III, 809.  
 implants of, effect of, on organ weights of starved and underfed rats, III, 309.  
 in giant fossil and living animals, III, 505.  
 in water intoxication of frogs, III, 747.  
 injection of, effect of, on genital weight, III, 599.  
 lactogen content of, effect of oestron on, in rabbits, III, 598.  
 effect of progesterone on, in ovariectomised rats, III, 813.  
 effect of stilboestrol on, in rats, III, 387.  
 in pseudopregnant rabbits, III, 598.  
 lesions in, effect of, on mating behaviour of guinea-pigs, III, 599.  
 morphology of, in amphibian metamorphosis, III, 383.  
 pars distalis of, vacuolisation of, in relation to age, menstruation, and thyroidism, III, 452.  
 pars intermedia of, growth and activity control of, by hypothalamus, in tadpoles, III, 231.

**Pituitary, pars nervosa of, elimination of, without eliciting diabetes insipidus, III, 687.**  
 pars neuralis of, ox, protein from, with oxytocic, pressor, and diuresis-inhibiting properties, III, 688.  
 pharyngeal, hormonal content of, III, 122.  
 of dogs, III, 433.  
 pigmentary regulation by, in rattlesnakes, III, 599.  
 posterior, III, 810.  
 cytological and hormonal changes in, after water deprivation and stalk section in rats, III, 385.  
 determination of, biologically, III, 923.  
 effect of removal of, on water diuresis inhibition, III, 890.  
 mammary gland, contracting assay of, factor of, III, 125.  
 postmortem instrument for obtaining, without removal of calvarium, III, 502.  
 preparations, effect of, on liver weight in hypophysectomised rats, III, 747.  
 nitrogen storage produced by, effect of adrenals and pancreas on, III, 747.  
 purified, effect of, on insulin content of rat pancreas, III, 598.  
 on liver weights in hypophysectomised rats, III, 598.  
 prolactin in, III, 124.  
 relation of, to iodine metabolism, III, 309.  
 to serum-albumin and -globulin levels, III, 889.  
 rôle of, in carbohydrate metabolism, III, 809.  
 in melanogenesis, III, 810.  
 stalk, tumour of, III, 308.  
 swine, III, 748.  
 toad, hormonal action of, on mammals, III, 309.  
 treatment of, with X-rays, effect of, III, 308.  
 tuberculoma of, with anterior lobe deficiency, III, 597.  
 weight of, effect of oestron injections on, in thyrohyperplastic rats, III, 233.  
**Pituitary-diencephalon system, carbohydrate metabolism and, III, 310.**  
**Pituitary extracts, anterior, diabetogenic, histology of effects of, and their relation to pathogenesis of diabetes, III, 231.**  
 effect of, on carbohydrate and protein metabolism, III, 747.  
 on insulin content of pancreas, III, 598.  
 on wound healing, III, 123.  
 growth-promoting, assay of, with diethylstilboestrol treated rats, III, 687.  
 treatment with, of diabetes with growth and sexual retardation, III, 522.  
 corticotrophic, augmentation of, and effect on adrenals, thymus, and preputial glands of rats, III, 383.  
 effect of, on body salts and water, antagonistic to deoxycorticosterone, III, 121.  
 on female lizard, III, 522.  
 growth and diabetogenic action of, III, 522.  
 posterior, antidiuretic and pressor activities of, III, 231.  
 renal concentration test with, III, 820.  
 shock from, in childbirth, III, 522.  
 pressor and oxytocic fractions of, effect of, on water loss in rats, III, 688.  
 synergism between, and chorionic gonadotropins, III, 384.  
**Pituitrin, comparison of, with urine and placenta antidiuretic substance, III, 810.**  
**Placenta, aconitase in, III, 716.**  
 androgens in, III, 390.  
 artificially induced, fibrous connective tissue of, III, 814.  
 effect of, on corpus luteum in mice, III, 135.  
 extracts, enzymic activity of, III, 717.  
 function of, control of, III, 314.  
 human, calcification of, III, 237.  
 stereometric model of, III, 236.  
 permeability of, to antibodies, III, 892.  
 to cirrhotogenic poisons, III, 814.  
 to hormones, III, 814.  
 to phospholipin, in rats, III, 751.  
 radioactive-sodium transfer across, in sows, III, 605.

**Placenta, site of, localisation of, by tomography, III, 454.**  
 visualisation of, roentgenographic, III, 605.  
**Placenta praevia, maternal age and parity in, III, 137.**  
**Placentoma, production of, effect of progesterone on, in guinea-pigs, III, 813.**  
**Plague, immunisation against, in South Africa, III, 493.**  
 spread of, burrowing owl and sticktight flea in, III, 720.  
**Planarian head, regeneration of, in Ringer's fluid, III, 659.**  
**Planets, atmospheres round, I, 222.**  
 nebulae of, I, 222.  
 physical condition of, I, 76.  
**Plants, amide synthesis in, III, 417.**  
 Argentine, II, 275, 336.  
 biochemistry and chemistry of, II, 260.  
 boron deficiency in, III, 862.  
 buds, dormancy of, effect of yeast extracts on, III, 275.  
 effect on, of zinc deficiency, III, 277.  
 chlorophyll-iron ratio in, III, 359.  
 chromosome counts in, III, 787.  
 cold-resistance in, III, 275.  
 constituents of, formation of, III, 278.  
 copper deficiency in, III, 500.  
 cultivated, effect on, of lithium salts, III, 654.  
 cuttings, treatment of, with hormones, III, 275.  
 determination in, of ascorbic acid, III, 278.  
 of auxins, III, 359.  
 of carotene, III, 405.  
 of water, III, 360, 426, 427.  
 dicotyledonous and monocotyledonous, boron-calcium metabolism of, III, 653.  
 effect on, of vitamin-B<sub>1</sub> and on their cuttings, III, 861.  
 of zinc sulphate, III, 654.  
 fertilisation and sexuality in, materials for, III, 141.  
 flowering, sex evolution in, III, 189.  
 flowering of, controlled by phytohormones, III, 721.  
 forage, cell-wall constituents of, III, 72.  
 frost-resistance of, and revivescence, III, 179.  
 fumariaceous, alkaloids of, III, 502.  
 green, assimilation by, III, 180.  
 growth of, effect of human cerebrospinal fluid on, III, 586.  
 in relation to photo-period, III, 73.  
 gums from, chemistry of, II, 166.  
 higher, growth substances in, III, 653.  
 reaction of, with soil micro-organisms, III, 423.  
 host, relation of insects to, III, 654.  
 hydroxyanthraquinones in, III, 950.  
 incompatibility in, III, 858.  
 leaves. See under Leaves.  
 leguminous, oxalacetic acid in, III, 181.  
 poisonous to fish, active principles of, II, 211.  
 symbiosis of, with nodule bacteria, III, 654.  
 manganese deficiency in, and nitrate accumulation, III, 948.  
 marine, formation of, III, 785.  
 nectar from, sugar in, III, 181.  
 nitrogen metabolism of, III, 653.  
 nutrition of, III, 562.  
 and hydrogen ions, III, 859.  
 iodine in, III, 948.  
 physiology of, III, 948.  
 sodium in, III, 358, 860.  
 oxygen in culture of, III, 652.  
 papaveraceous, alkaloids of, II, 275, 429.  
 phosphatases of, III, 936.  
 photo-oxidation in, III, 180.  
 response of, to darkness and light in cycles, III, 785.  
 rotation of, on klinostat, effect of, III, 785.  
 sand, germination of, in Nebraska, III, 358.  
 self-sterile, induction of fertility in, III, 500.  
 vitamin-K in, III, 180.  
 volatile substances in, I, 388; II, 369, 416; III, 862.  
 water, photosynthesis by, in thermal springs, III, 276.

- Plants, woody, effect on, of vitamin-B<sub>1</sub>, III, 500.  
 regeneration of, after long splits, III, 785.
- Plant ash, mineral elements in, in relation to ashing conditions, III, 181.
- Plant cells, effect of X-rays on, III, 277.  
 green, protoplasm of, III, 722.  
 metabolism in, III, 499.  
 permeability and salt accumulation in, III, 859.  
 proliferation of, hormones promoting, III, 785.
- Plant extracts, pasture, for use in treatment of facial eczema, III, 787.
- Plant materials, determination in, of copper and zinc, III, 656.  
 of potassium, III, 656.  
 of sodium, III, 181.  
 extractors for, I, 282.
- Plant pigments, anthochlor, II, 421; III, 360.  
 chloroplast, analysis of, spectrophotometrically, III, 788.
- Plant products, biochemistry and chemistry of, II, 268.
- Plant tissues, extraction of ascorbic acid from, III, 407.  
 green, unsaponifiable constituents from, III, 75.  
 lignin in, effect of drying on, III, 501.  
 localisation of chemical constituents of, III, 75.  
 preparation of paraffin sections of, III, 75.  
 respiration in, III, 947.
- Plant viruses, inactivation and reactivation of, by chemicals, III, 944.  
 isolation and crystallisation of, III, 846.  
 staining of, with trypan-blue, III, 74.  
 testing of, serologically, III, 784.
- Plantago arenaria*, seed mucilage of, II, 135.
- Plasma, seminal. See under Seminal fluid.
- Plasmodium catheherium*, respiratory metabolism of, III, 556.
- Plasmodium knowlesi*, antigens, agglutination reaction in response to, III, 938.  
 complement-fixation reaction to, III, 717.
- Plasmodium lophura*, infection by, effect of carbon ink injections on, in chickens, III, 344.  
 survival conditions of, III, 850.
- Plasmodium vivax*, infections by, resulting in paroxysms, III, 491.
- Plasteins, synthesis of, from insulin, III, 936.
- Plastics, elastic moduli and viscosity of liquids and, I, 292.  
 optical properties of, I, 228.
- Plastics, amino-, and phenol-, II, 309.
- Plasticity, of solids, theory of, I, 137.
- Platinum, absorption of radium  $\beta$ -rays in, I, 255.  
 catalysts of higher polymerides and, I, 150.  
 electrical conductivity in, I, 199.  
 ions, intermediate colloid state in formation of, I, 172.  
 thermal expansion of, I, 167.
- Platinum alloys, with cobalt, molybdenum, or tungsten, crystal structure of, I, 141.  
 with iron, coercivity and structure of, I, 323.
- Triplatinum tetroxide, crystal structure of, I, 136.
- Platinum determination:—  
 determination of, spectrophotometrically, I, 377.
- Platinum metals, dehydrogenation with, II, 341.
- Platinum wire, micro-electrodes of, I, 65.
- Platybasia, III, 79, 865.
- Platypterus maculatus*, anal fin of, regenerating, effect of androgens on, III, 690.
- Platyphylline, II, 66.
- Plazolite, I, 219.
- Pleione, spectrum of, I, 253.
- Pleonaote, Mineral Co., Nevada, I, 347.
- Pleura, hæmorrhagic effusion of, III, 102.  
 macrophagal foci in, in mammals, III, 83.
- Pleural shock, III, 206.
- Pleurisy, talc, tuberculosis following, III, 648.
- Plotnikov effect, theory of, I, 9.
- Plummer-Vinson syndrome, with ulcer œsophagi pepticum, III, 691.
- Pneumatotherapy, oxygen and other gases in, III, 207.
- Pneumococci, antigenic action of cold vaccine on, III, 494.  
 development of sulphapyridine resistance by, III, 626.  
 immunising substances in, III, 65.  
 immunity to, effect of sulphapyridine treatment on, III, 626.  
 infections by, III, 559.  
 action of sulphanilamide derivatives on, in mice, III, 409.  
 treatment of, with sulphapyridine, III, 335, 838.  
 polysaccharides, combination of, with antibodies, III, 782.  
 cross reactions between, III, 647.  
 response of, to sulphonamides, III, 543.  
 sensitivity of, to sulphapyridine, test for, III, 259.  
 to sulphonamide, III, 705.  
 skin reactions in rabbits sensitised to, III, 66.  
 sulphonamide-fast, response of, to penicillin, III, 705.  
 typing of, delayed, III, 782.
- Pneumoconiosis, due to fuller's earth inhalation, III, 485.  
 in talc industry, III, 929.  
 physical type in, III, 262.
- Pneumectomy, treatment by, of cancer of lung, III, 207.
- Pneumonia, agglutination and Francis tests as indices of recovery in, III, 176.  
 aspiration, experimental, fluorescence and pathology of, III, 102.
- Bacillus friedländer*, incidence of, III, 347.  
 primary, treatment of, III, 160.  
 bacteriology and clinical survey of, in children, III, 941.  
 chemotherapy of, and immunity reactions, III, 838.  
 in childhood and infancy, III, 627.  
 complement activity in, III, 853.  
 cutaneous reactions with specific soluble substance in, III, 348.  
 from cod-liver oil and liquid petrolatum in children, III, 443.  
 immunisation against, with pneumococcus polysaccharide, III, 347.  
 in childhood, III, 515.  
 in young adults, III, 176.  
 lipid, due to iodised oil, III, 854.  
 lobar, treatment of, with antipneumococcus serum, III, 65.  
 with sodium sulphapyridine monohydrate, III, 477.  
 with sulphapyridine, III, 410.  
 with sulphapyridine and sulphathiazole, III, 477, 478.
- plasma-amino-acid level in, III, 665.  
 plasma-prothrombin behaviour in, III, 369.
- pneumococcal, capsular polysaccharide in blood in, III, 558.  
 capsular polysaccharide in pleural exudates in, III, 558.  
 effect of specific soluble substance on, III, 493.  
 recurrence of, III, 853.  
 treatment of, with sodium sulphadiazine, intravenously, III, 626.  
 with sulphadiazine and sulphathiazole, III, 853.  
 with 2-sulphanilamidopyrazine, III, 47.  
 with sulphapyridine and sulphathiazole, III, 919.  
 with sulphapyrimidine, III, 410, 477.  
 type-specific antibodies in blood in, III, 626.
- pneumococcal type III, treatment of, with serum and sulphanilamide, III, 47.
- sputum in, effect of sulphapyridine and sulphathiazole on, III, 627.
- treatment of, in children, III, 160.  
 with cinchona alkaloids, II, 336.  
 with drugs, III, 544.  
 with X-rays, III, 16, 930.  
 with sulphapyridine, III, 46.  
 in children, III, 47, 410.  
 in old age, III, 477.
- Pneumonia, treatment of, with sulphapyridine, toxic effect of, III, 546.  
 with sulphonamides, in children, III, 477.  
 typing of, III, 941.
- Pneumonitis, after Q fever infection in mice, III, 561.  
 treatment of, with sulphonamides in mice, III, 707.  
 virus, primary, III, 720.
- Pneumoperitoneum, spontaneous, radiology of, III, 243.
- Pneumopyelography, stereoscopic, valve of, III, 531.
- Pneumothorax, artificial, air embolism in, III, 671.  
 neonatal, III, 375.  
 open, breathing changes produced by, III, 735.
- Podophyllum, effect of, on bile flow in dogs, III, 482.
- Poisons, African arrow, II, 43.  
 arrow, III, 771.  
 bee, treatment with, of arthritis, III, 928.  
 cirrhogenic, placental permeability to, III, 814.  
 cobra, as analgesic. See under Analgesics.  
 colour and fluorescence of, relation between, III, 902.  
 treatment with, of angina pectoris, III, 96.  
 industrial, circulatory collapse from, III, 485.  
 medical aspects of, III, 485.  
 nervous system and, III, 301.  
 metabolic, effect of, on erythrocyte permeability to potassium, III, 88.  
 moccasin, III, 637.  
 rattlesnake, effect of, on blood-histamine in guinea-pigs and rabbits, III, 632.  
 snake, III, 147.  
 effect of, on arterial blood pressure, III, 169.  
 enzymes of, III, 716.  
 toxic principles of, separation of coagulant from, III, 195.  
 toad, II, 322.
- Poisoning, alcohol concentration in relation to, III, 484.  
 arsenic, arsenic in hair and bone in, III, 770.  
 in buffaloes, III, 634.  
 barbiturate, treatment of, with picrotoxin, III, 52.  
 bee, treatment with, of rheumatoid arthritis, III, 637.  
 benzedrine, neuropathology of, III, 928.  
 boric acid, III, 552.  
 bracken, III, 414.  
 bread, in man, caused by *Senecio* alkaloids, II, 66.  
 bromide, III, 54.  
 cadmium, III, 262.  
 carbon tetrachloride, acute, treatment of, III, 843.  
 protection against, by sulphonamides, III, 545.  
 carbon monoxide, epilepsy after, III, 18.  
 from faulty gas appliances, III, 552.  
 carbon disulphide, experimental, chronic, in dogs, III, 413.  
 in industry, III, 638.  
 nervous lesions in, III, 18.  
 neuropathological changes in, in cats, III, 219.  
 carbonyl chloride, III, 844.  
 pathology and symptoms of, III, 927.  
 chlorate, theory of, III, 337.  
 chlorinated hydrocarbon, III, 414.  
 chloroform, acute, liver in, III, 897.  
 delayed, in obstetrics, III, 319.  
 susceptibility to, increased by thyroxine, III, 684.  
 chronic, in industrial operations, III, 845.  
 cyanide, III, 414.  
 ethyl alcohol, effect of, on liver function, III, 609.  
 fern, in cattle, goats, and sheep, III, 772.  
 fluorine, antidotes for, III, 637.  
 industrial, with inorganic substances, cerebral and psychopathological symptoms in, III, 301.  
 insulin, III, 27.  
 laurel, of sheep, III, 637.



- Poisoning**, lead, anæmia of, porphyrinuria in, III, 367.  
 hamopoiesis in, III, 730.  
 hazard of, in glass workers, III, 638.  
 in storage battery industry, III, 55.  
 in heifers, III, 413.  
 physiology and therapy of, lead citrate complex ion rôle in, III, 412.  
 prevention of, in industry, III, 929.  
 protein intake in relation to, III, 635.  
 treatment of, with therapeutic agents, III, 52.  
 manganese, in industry, III, 338.  
 mercuric chloride, treatment of, with testosterone propionate, III, 635.  
 mercury, as mining hazard, III, 553.  
 from anti-fouling plastic paint, III, 713.  
 treatment of, with sodium formaldehyde-sulphoxylate, III, 926.  
 methyl alcohol, III, 843.  
 methyl salicylate, III, 927.  
 morphine, effect of, on oxygen consumption of rat skeletal muscle, III, 633.  
 mustard cake, of cattle, III, 637.  
 of cattle, III, 637.  
 oxygen, dehydrogenase inactivation in, III, 101.  
 produced in oxygen tent, III, 879.  
 paraldehyde, III, 710.  
 phosphorus, acute, liver in, III, 897.  
 potassium permanganate, after ingestion, III, 552.  
 quinine, blindness caused by, III, 844.  
 radium, III, 931.  
 sacabaiste buds and blooms, in sheep and goats, III, 844.  
 salmon, III, 638.  
 sodium fluoride, skeletal fluorosis in, III, 712.  
 sodium nitroprusside, fatal, III, 414.  
 sweet clover, effect of alfalfa lipins on, in cattle, III, 326.  
 T.N.T., health hazard in, III, 415.  
 tri-*o*-tolyl phosphate, injuries after, nerve-muscle chronaxie in, III, 299.  
 zinc, industrial, III, 485.  
 zinc chloride, effect of, on vitamin deficiency in rats, III, 327.
- Polarisation**, steric inhibition and promotion of, II, 359.  
**Polarographs**, production of, I, 280.  
 use of, I, 250.  
**Polarography** in non-aqueous media, I, 399.  
**Poliomyelitis**, III, 273, 353, 944.  
 anterior, and hypertension, III, 441.  
 diagnosis of, mouse test for, III, 650.  
 effect on, of inoculation with choriomeningitis virus, III, 561.  
 epidemics of, in Los Angeles, III, 856.  
 experimental, treatment of, with theelin intranasally, III, 387.  
 human, natural history of, III, 856.  
 immunity in, III, 944.  
 induced by Lansing strain of virus, III, 353.  
 infection with, III, 650.  
 serum utilisation test in, III, 353.  
 treatment of, with glycine, III, 48.  
 virus, effect of, during insulin hypoglycæmia in rabbits, III, 496.  
 flies as carriers of, III, 720.  
 in autopsies, III, 944.  
 inoculation of stool from carriers of, in monkeys, III, 720.  
 isolation of, in Peiping, III, 561.  
 microscopy of, III, 944.  
 neuroinvasiveness of, in relation to vitamin-D, III, 496.  
 protection against, with human serum in mice, III, 496.  
 spread of, along nerve axons, III, 650.  
 with transposed tendons, re-coordination of leg movements in, electromyography of, III, 376.
- Polishing**, of opaque minerals, I, 343.  
 with abrasive films, apparatus for, I, 343.
- Pollen**, allergens in, III, 784.  
 antigen of, enteral absorption of, III, 499.  
 comparative value of, and its substitutes, III, 152.
- Pollen**, concentration of, in atmosphere, III, 652.  
 extracts, antigens of, absorption of, III, 356.  
 pills of, treatment with, of allergy, III, 721.  
 grains, examination of, unstained, III, 356.  
 grass. See Grass pollen.
- Polyacrylic acid**, effect of X-rays on  $p_H$  of solutions of, I, 21.  
**Polyamides**, synthesis of, II, 197.  
**Polyamines**, condensation of, with phthalic anhydride in acetic acid, II, 406.  
**Polyanetholesulphonic acid**, sodium salt. See Liquoid.
- Polyazobenzenesulphonic acids**, II, 356.  
**Polyazo-dyes**, constitution and absorption spectra of, II, 8.  
**Polyisobutylene**, II, 293.  
**Polychloroprene**, crystal structure of, I, 260.  
 X-ray structure of, I, 260.
- Polyerystals**. See under Crystals.
- Polycyclic compounds**, light absorption of, I, 385.
- Polycyte**, III, 662.
- Polycythæmia**, experimental, depression of, by various substances, III, 163.  
 recovery from, III, 662.  
 phosphorus metabolism of blood in, III, 436.  
 pseudo-, III, 366.  
 radiophosphorus in blood in, III, 287.
- Polycythæmia vera**, treatment of, with lead compounds, III, 796.
- Polydipsia**, polyuria with, due to deoxycorticosterone acetate, III, 121.
- Polyenealdehydes**, aliphatic, higher, preparation of, II, 163.
- Polyesters**, linear, macromolecular properties of, I, 143.
- Polyethylbenzenes**, action on, of aluminium chloride, II, 136.
- Polyethyleneimines**, I, 363.
- Polyglucosan**, synthesis of, II, 6.
- Polyglycine**, esters, II, 249.
- Polyglycol** others, anomalous viscosity of solutions of, I, 91.
- Polisoprenes**, II, 353.  
 autooxidation of, II, 161, 170.  
 synthesis of, of rubber and squalene type, II, 161.
- Polymerides**, chain, mol. wt. and viscosity of, I, 237.  
 stereochemistry of, I, 260.  
 colloidal and semi-colloidal solutions of, I, 20.  
 elasticity of, I, 362.  
 high, catalysts of palladium or platinum and, I, 150.  
 crystallisation in, I, 173.  
 deformation of, I, 85.  
 diffusion of gases through, I, 171.  
 formation of films of, from emulsions, I, 55.  
 milling of, in relation to properties, I, 363.  
 mol. wt. and viscosity of, I, 364.  
 particle size of, I, 282.  
 reaction of, in solution, I, 68.  
 solid, dielectric loss of, I, 195.  
 solubility of, I, 364.  
 solutions of, theory of, I, 397.  
 thermodynamics of, I, 58, 364.  
 viscosity of, I, 397.  
 viscosity and physical properties of, I, 265.  
 high-frequency energy losses in, I, 58.  
 intramolecular condensation of, II, 248.  
 long-chain, kinetics of degradation and size distribution of, I, 67.  
 polydispersity of, I, 142.  
 rubber-like, molecular movements in, I, 260.  
 separation of, by fractional precipitation, I, 97.  
 three-dimensional, constitution and gelation of, I, 173.  
 molecular size distribution in, I, 97.
- Polymerisation**, addition, catalysis of, by acyl peroxides, II, 304.  
 kinetics of, I, 242.  
 of gases, I, 301.  
 of mixed substances, I, 370.
- Polymethine dyes**, spectra of, absorption, I, 351.
- Polymethylbenzaldehydes**, II, 15.
- Polyneuritis**, toxic, due to sulphamethylthiazole, III, 921.
- Polyolefins**, autooxidation in, II, 341.
- Polypeptidæmia**, III, 799.
- Polypeptides**, dielectric constants of, I, 327, 393.
- Polyphenoloxidase**. See under Oxidase.
- Polyphenylnaphthalenes**, II, 253.
- Polyploidy**, due to colchicine, III, 74.
- Polyps**, of colon and rectum in infants and children, III, 152.
- Polyradiculoneuritis**, chronic, with high protein and normal cell content in cerebrospinal fluid, III, 741.
- Polysaccharides**, bacterial, enzymic formation of, III, 718.  
 formation of, by hydrolysis of red beech wood, II, 352.  
 synthesis of, from glucose by enzymes, III, 936.  
 tissue, stabilising action of crystal-violet on, III, 569.
- Polystyrene**, cryoscopy and viscosity of, I, 397.  
 distillation of, II, 220.  
 milling of, I, 363.  
 plasticised, for mounting, III, 8.  
 rolled, elastic relaxation and double refraction of, I, 289.  
 solutions of, in xylene, I, 327.
- $\alpha$ -Polythienyls**, II, 61.
- Polyuria**, with polydipsia, due to deoxycorticosterone acetate, III, 121.
- Polyvinyl alcohol**, crystal structure of, I, 46.
- Polyvinyl chloride**, plasticised, electrical properties of, I, 238.  
 polymerides of, with diphenyl and tetrahydronaphthalene, I, 21.  
 reactions of, II, 343.  
 viscosity of solutions of, I, 237.  
 compounds, structure of, II, 164, 343.
- Pomiferin**, and its derivatives, II, 243.  
 trimethyl ether, 2:3-epoxide, II, 179.
- isoPomiferin dimethyl ether**, 2:3-epoxide, II, 179.
- Pongamia glabra**, seeds, constituents of, II, 46.
- Pongamia oil**, II, 123.
- Pongamol**, and its derivatives, II, 431.  
 preparation and properties of, II, 123.
- Population**, changes in, in relation to mice and their parasites, III, 322.  
 movement of, mathematics of, III, 322.
- Populin**, effect on, of almond emulsion, III, 641.
- Populus macdougalii**, hemicelluloses and pectic acid from, III, 950.
- Porcupine**, Canadian. See *Erethizon dorsatum*.
- Porphobilinogen**, urinary, test for, III, 44.
- Porphyria**, acute, III, 474, 898.  
 idiopathic, uroporphyrin from faeces in, III, 43.
- Porphyryns**, II, 381.  
 chlorination and nitration of, II, 152.  
 secretion of, water metabolism in relation to, in rats, III, 471.  
 spectra of, and of their acid salts, II, 34.
- Porphyrindin**, reactivity of, in presence of denatured proteins, II, 184.  
 synthesis of, II, 274.
- Porphyrinuria**, in aged, III, 532.  
 in anæmia of lead poisoning, III, 367.
- Positrons**, annihilation rays from, I, 255.  
 Dirac theory of, I, 163, 192.
- Potassamide**, action of, on aldoximes, and their derivatives, II, 15.  
 on diarylbromocethylenes in liquid ammonia, II, 355.
- Potassium**, at. wt. of, I, 78.  
 foils, thin, preparation of, I, 159.  
 inverse Stark effect and electrical double refraction in, I, 254.  
 ions, activities of, in colloidal clay, I, 172.  
 scattering of, in mercury vapour, I, 350.  
 isotopes, radioactive, content of, in human body, III, 417.  
 nuclear spin and magnetic moment of, I, 255.  
 photo-effect of, I, 349.
- Potassium compounds**, biochemical influence of, and phosphorus, III, 258.  
 content of, in muscular disorders, III, 737.  
 deficiency of, Purkinje fibre lesions of bovine heart due to, III, 578.  
 effect of intake of, on asthma in children, III, 710.  
 in blood corpuscles. See under Blood-corpuscles.

**Potassium compounds**, isotopic shift of, in human bone-marrow and cancer, III, 615.  
 liberation of, during stomach contractions, III, 142.  
 metabolism of, relation of thyroid hormone to, III, 333.  
 muscle-. See under Muscle.  
 permeability to, of red cells, effect of metabolic poisons on, III, 88.  
 requirement of, for pigs, III, 907.  
 serum-. See under Blood-serum.  
 toxicity of, effect of calcium and sodium on, in mice, III, 634.  
 for normal and adrenalectomised rats, III, 595.  
 urinary, effect on, of prostigmine, III, 771.  
**Potassium salts**, effect of, in man, III, 843.  
 effect of injection of, and other agents, III, 411.  
 of Taimir-Lena area, I, 123.  
 partial molal volumes of, I, 52.  
 treatment with, of diabetes, III, 475.  
**Potassium bromide**, density of, I, 392.  
 mol. wt. of, I, 78.  
 X-ray scattering by, I, 229.  
 refractive index of, I, 316.  
 bromide and iodide, large crystals of, for optical use, I, 180.  
 bromide, chloride, and fluoride, mixtures of, with the sodium salts, I, 63.  
 carbonate, solubility isotherms of the permanganate and, II, 63.  
 chlorate, decomposition of, cobaltous oxide and ferromagnetic ferric oxide catalysts for, I, 177.  
 molal volumes of, in hydrochloric acid, I, 293.  
 solutions of, I, 16.  
 chloride, conductance and ionic mobilities of aqueous solutions of, I, 206, 399.  
 crystals, vibrations in, I, 138.  
 density of, I, 392.  
 effect of, on neuromuscular atrophy and regeneration, III, 548.  
*pg*-pure, preparation of, I, 338.  
 X-ray scattering by, I, 229.  
 thermodynamics of aqueous solutions of, I, 239.  
 treatment with, of infantile eczema, and its effect on serum potassium, III, 710.  
 vapour pressure of saturated aqueous solutions of, I, 141.  
 chromate and dichromate, osmotic and activity coefficients of, I, 62.  
 dichromate, equilibrium of, with potassium chloride and nitrate and water, I, 330.  
 hydride, band spectrum of, I, 287.  
 dihydrogen arsenate, X-ray structure of, I, 230.  
 hydrogen fluoride and deuterium fluoride, infra-red spectra of, I, 80.  
 hydroxide, electrolytic conductivity of, I, 240.  
 viscosity of solutions of phosphates and, I, 52.  
 iodate, electrical conductance of, I, 147.  
 iodide, complex formation between aqueous mercuric chloride and, I, 266.  
 transport numbers of, I, 241.  
 nitrate, decomposition of, in sunlight, I, 108.  
 Raman effect in, I, 41.  
 oxide, equilibrium of, in mixtures with carbon dioxide, silica, and water, I, 174.  
 isotherms of mixtures of, with sulphur trioxide and water, I, 63.  
 oxyhexafluoroborate, crystal structure of, I, 290.  
 permanganate, poisoning by. See under Poisoning.  
 reaction of, with hydrogen peroxide, I, 376.  
 spectrum of, absorption, I, 225.  
 silicates, mixtures of calcium silicates and, I, 23.  
 sodium cobaltinitrite, precipitates of, I, 72.  
 sulphate, vapour pressure of saturated aqueous solutions of, I, 141.  
 tetrathionate, crystal structure of, I, 320.  
**Potassium organic compounds**:-  
**Potassium 2:6-diiodo-4-nitrophenoxide**, II, 282.  
*α*-naphthylisopropyl, II, 140.  
 trimethyl orthosilicate, I, 296.

**Potassium determination**:-  
 determination of, as cobaltinitrite, I, 72.  
 in organic compounds, chromatographically, I, 375.  
 in plant materials, III, 656.  
 in serum, III, 864.  
 in silicate rock, I, 277.  
 photometrically, I, 339.  
 polarographically, I, 340.  
 with dipicrylamine, I, 409.  
 with photo-electric colorimeter, III, 724.  
**Potatoes**, nitrogen in, III, 949.  
 tuber blotch virus of, III, 651.  
**Potato juice**, starch phosphorylase of, III, 419.  
**Potato plants**, roots, death determination in eelworm larvae on, III, 425.  
 virus diseases of, III, 561.  
**Potato starch**. See under Starch.  
**Potential**, breakdown, in gases, I, 8.  
 contact, I, 268, 331.  
 electrokinetic, effect of electrostatic forces on, I, 98, 365.  
 magnitude of, I, 365.  
 fluorescent lamps as stabilisers for, I, 281.  
 ionisation, of polyatomic molecules, I, 7.  
 liquid junction, elimination of, I, 100.  
 of metals, in temperature gradients, I, 167.  
 standard electrode, of elements and their position in periodic system, I, 268.  
 working electrode, automatic control of, I, 157.  
**Poultry**, as food converters, III, 152, 251.  
 growth and egg-laying capacity of, effect of oestrogen triphenylethylene on, III, 311.  
 laying, calcium and phosphorus balances in, III, 827.  
 See also Chickens, Cocks, Fowls, *Gallus domesticus*, and Hens.  
**Powders**, crystalline, compressed, infra-red reflexion of, I, 80.  
 energy of immersion of, in water and organic liquids, I, 299.  
 radioactive study of, I, 262.  
 sintering of, I, 334.  
 spherical particles, time-conversion formula for, I, 301.  
**Prae-xerosis conjunctivæ**. See Eyes, Biotô's spots in.  
**Praseodymium**, isotopes, radioactive, I, 312.  
 spectrum of, spark, I, 125.  
**Praseodymium trifluoride**, m.p. of, I, 321.  
 oxide, compound of sodium oxide and, I, 209.  
**Prawns**, palæmonid, osmoregulation in, III, 695.  
**Precipitates**, black-enamelled basins for, I, 308.  
 surface condition of, and rate of reaction, I, 105.  
 structural, I, 204.  
 washing of, optimum volume for, I, 211.  
**Precipitation**, I, 398.  
 flocculation and, I, 21.  
**Precipitins**, technique for, in relationship studies in mammals, birds, and reptiles, III, 91.  
**Pre-eclampsia**, treatment of, with hormones, III, 388.  
**Preganglionectomy**, functional reorganisation after, III, 885.  
 $\Delta^{3:17}$ -Pregnadiene-21-carboxylic acid, 3( $\beta$ )-hydroxy-, II, 322.  
 $\Delta^{3:20}$ -Pregnadiene-3( $\beta$ ):17( $\alpha$ )-diol, acetate, II, 264.  
 $\Delta^{3:17}$ -Pregnadien-3( $\beta$ )-ol-20-carboxylic acid, II, 366.  
 $\Delta^{4:20}$ -Pregnadien-17( $\alpha$ )-ol-3-one, acetate, II, 264.  
**Pregnancy**, abdominal, diagnosis of, by X-rays, III, 486.  
 anæmia in, III, 288.  
 anatomical changes during, III, 525.  
 androgen production during, in rats, III, 893.  
 anti-diuretic factor in, III, 694.  
 Banti's syndrome and, III, 191.  
 bitemporal hemianopia in, III, 225.  
 cold pressor test for, III, 237.  
 concurrent, effect of lactation on implantation of ova of, III, 138.  
 diabetes and, III, 451.  
 diabetes insipidus in, III, 890.  
 diagnosis of, biological, III, 526.

**Pregnancy**, diagnosis of, by urinary histidine, III, 236.  
 tests for, III, 137, 892.  
 Aschheim-Zondek, III, 892.  
 mucin, in mares, III, 313.  
 urine, in mares, III, 604.  
 diodrast, inulin, and phenol-red clearance in, III, 460.  
 double uterus with, III, 689.  
 dysgerminoma complicating, with malignant secondary deposits, III, 892.  
 early, urea formation in placenta and foetal liver and kidney in, III, 331.  
 eclamptic toxæmia, hypertension, and nephritis in, III, 460.  
 ectopic, III, 137, 892.  
 effect of, on hypertension in rabbits, III, 100.  
 on pituitary lactogenic hormone, III, 231.  
 effect on, of cigarette smoke, III, 29.  
 of heptaldehyde, in rats, III, 402.  
 of ovariectomy, in monkeys, III, 386.  
 of vitamin-B<sub>2</sub> deficiency, III, 313.  
 foetal growth in, in man compared with primates, III, 792.  
 foetal injury from sulphanilamide during, III, 707.  
 hæmoglobin level in, III, 87.  
 heart disease during, III, 13.  
 pathology of, III, 202.  
 histidine reaction for, substance affecting, III, 313.  
 hypertensive disorders in, pregnandiol glucuronide excretion in, III, 389.  
 hypovitaminosis in, causation of, III, 907.  
 in patients with hypertension, III, 878.  
 interruption of, in cardiac disease, III, 137.  
 intra- and extra-uterine, simultaneous, III, 237.  
 late, hyperemesis and vomiting in, pathology of, III, 137.  
 toxæmia of, prognosis for fetus in, III, 237.  
 leucorrhœa in, III, 236.  
 liver atrophy in, III, 530.  
 mammary cancer during, III, 152.  
 mid-, effect of hypophysectomy at, in mouse, III, 751.  
 mouth ulcerations in, due to vitamin deficiency, III, 327.  
 normal and toxæmic, blood concentration changes in, III, 293.  
 histidine metabolism in, III, 313.  
 renal function tests in, III, 460.  
 nutrition in, III, 467.  
 oestrogen and pregnandiol rôle in, III, 602.  
 oestrogen and progestin metabolism in, III, 388.  
 pelvic joint relaxation in, III, 237.  
 pregnandiol glucuronide and 17-ketosteroid excretion in, III, 136.  
 prolonged, III, 136.  
 in rats, III, 386.  
 oestrogen control of, in lactating rats, III, 751.  
 pseudo-, copper-induced, in oestrous rats, III, 604.  
 Recklinghausen's disease in, III, 110.  
 relation of, to arsenotherapy of early syphilis, III, 711.  
 renin and, III, 514.  
 successful, after tubo-uterine implantation, III, 236.  
 toxæmias of, III, 604.  
 diodrast, inulin, and phenol-red clearance in, III, 460.  
 œdema of. See under Œdema.  
 pituitary factor in, III, 454.  
 tubal, unilateral twin, with intrauterine pregnancy, III, 237.  
 tuberculosis treatment during, III, 844.  
 vaginal endometriosis and, III, 137.  
 vitamin-C lowering in, III, 136.  
 water metabolism in, III, 334.  
**Pregnane**, 17-hydroxy-, molecular rearrangement of compounds of, II, 147.  
 17( $\alpha$ )-hydroxy-, derivatives, configuration of, II, 365.  
 17( $\beta$ )-hydroxy-, derivatives, preparation of, II, 368.

- Pregnanediol**, conversion of progesterone into, in rabbit, III, 891.  
 excretion of, effect of androgen on, in cyclical women, III, 390.  
 in women with virilism, III, 29.  
 glucuronidate, determination of, gravimetric and reduction methods for, III, 749.  
 excretion of, in pregnancy, III, 136, 389.  
 in pseudohermaphroditism, III, 136.  
 sodium, determination of, in pregnancy urine, III, 389.  
 rôle of, in pregnancy, III, 602.
- Pregnane-3(a):20(a)-diol**, isolation of, from urine of pregnant chimpanzees, III, 749.
- Pregnane-3(β):5(8)(trans):21-tetraol-20-one**, acetates, II, 26.
- alloPregnane-3(β):17(a):20(a):21-tetraol**, acetates, II, 264.
- alloPregnane-3(β):6(β):2(β)-triol**, and its triacetate, II, 231.
- alloPregnane-3(β):17(a):20(a):21-tetraol**, and its derivatives, II, 147.
- Pregnane-5(6)(trans):21-triol-3:20-dione**, 6:21-di-acetate, II, 26.
- alloPregnane-3(a):17(β):21-triol-11:20-dione**, 3:21-di-acetate, II, 413.
- Pregnane-3(β):5(6)(trans)-triol-20-one**, acetates, II, 104.
- alloPregnane-3(β):17(a):21-triol-20-one**, acetates, II, 264.
- Pregnanoic 21-acid**, 3(β)-hydroxy-, II, 264.
- alloPregnan-3(β)-ol-21-carboxylic acid**, II, 322.
- Pregnan-3(β)-ol-20-one**, conversion of, into aetiocolan-3(β)-ol-17-one, II, 264.
- Pregnan-3(β)-ol-20-one**, 17- and 21-mono- and 17:21-di-bromo-, and their derivatives, and 21-hydroxy-, acetyl derivative, II, 230, 231.
- alloPregnan-3(β)-ol-20-one**, isolation of, from human pregnancy urine, III, 455.
- Pregnan-20-one**, 5:6:17:21-tetrabromo-3(β)-hydroxy-, acetyl and propionyl derivatives, II, 322.  
 21-chloro-, II, 415.  
 21-chloro-3(β)-hydroxy-, 3(β)-acetyl derivative, II, 415.  
 3(a):21-di-hydroxy-, diacetyl derivative, II, 232.  
 3(β):21-di-hydroxy-, diacetyl derivative, II, 231.
- alloPregnan-20-one**, and 17-mono- and 17:21-di-bromo-, II, 264.
- Δ<sup>5</sup>-Pregnene-3(β):17(a)-diol-20-carboxylic acid**, and its derivatives, II, 366.
- Δ<sup>5</sup>-Pregnene-6(a):21-di-ol-3:20-dione**. See 11-Deoxycorticosterone, 6(a)-hydroxy-.
- Δ<sup>5</sup>-Pregnene-3(β):17(β)-diol-20-one**, synthesis of, II, 368.
- Δ<sup>16</sup>-alloPregnene-3(β):6(β)-diol-20-one**, and its diacetate, II, 265.
- Δ<sup>5</sup>-Pregnene-3(β):17(a):20(a)- and -20(β):21-tetraols**, derivatives of, II, 365.
- Δ<sup>5</sup>-Pregnene-3(β):17(β):20(β)-triol-21-al**, 3:20-di-acetate, II, 367.
- Δ<sup>4</sup>-Pregnene-17(a):20(a) and 20(β):21-triol-3-ones**, derivatives of, II, 365.
- Δ<sup>5</sup>-Pregnene-3(β):17(β):21-triol-20-one**, 3:21-di-acetate, II, 367.
- Pregneninolone**, mammary growth with, III, 29.  
 treatment with, of functional uterine bleeding, III, 602.
- Δ<sup>17:20</sup>-Pregnenic 21-acid**, 3(β)-hydroxy-, and its derivatives, II, 264.
- Δ<sup>17:20</sup>-alloPregnenic 21-acid**, II, 264.
- Δ<sup>5</sup>-Pregnen-3(β)-ol-20-one**, conversion of, into dehydroisandrosterone, II, 322.
- Δ<sup>16</sup>-Pregnen-3(β)-ol-20-one**, 21-bromo-, II, 231.
- Δ<sup>5</sup>-Pregnen-20-one**, 3(β)-hydroxy-, propionyl derivative, II, 322.  
 3:21-di-hydroxy-, 21-acetate, hormonal activity of, III, 685.
- Δ<sup>16</sup>-alloPregnen-20-one**, II, 264.
- Prematurity**, care in, III, 725.
- Preputial glands**. See under Glands.
- Pressor substances**, amine, effect of, on hypertension, III, 734.  
 effect on, of quinones and related diketones, III, 840.  
 oxidation products of, antipressor and depressor effects of, III, 877.
- Pressure**, apparatus for indicating and regulating, I, 251.  
 atmospheric, high, human physiology under, III, 514.  
 low, effect of, on adrenals, thymus, and testicles of rats, III, 670.  
 resistance to, III, 803.  
 biological effects of, III, 555.  
 critical, relation of, to b.p., I, 357.  
 effect of, on melting points, I, 88.  
 measurement of, in vacua, I, 379.  
 of vapours, I, 167.  
 recording small changes of, III, 182.  
 regulators for, I, 159.  
 glass valve, I, 343.  
 utilisable limit of, I, 159.  
 whirling arm to produce small differences of, I, 75.
- Primates**, pregnancy and fetal growth in, compared with man, III, 792.
- Primula officinalis**, primverin of, synthesis of, II, 302.
- Primverin**, synthesis of, II, 302.
- Prisms**, crystal, production of, I, 180.
- Privin**. See Ciba.
- Proactinomycin**, bacteriostatic properties of, III, 778.
- Probe**, radio-frequency, for foreign-body location, III, 426.
- Procaine**, adsorbents for solutions of, with adrenaline, III, 51.  
 hydrochloride, perineum infiltration by, in obstetrics, III, 549.  
 treatment with, in almond oil, of sciatica, III, 516.  
 in solutions with adrenaline, preparation of, for surgical use, III, 260, 261.  
 infiltration of, in fibrositis, III, 770.  
 inhibition of auricular fibrillation by, III, 877.
- Pro-γ-carotene**, II, 303; III, 863.
- Procapia capensis**, litter size and gestation period of, III, 236.
- Proctitis**, due to lymphogranuloma venereum, treatment of, with sulphguanidine, III, 411.
- Prodenia eridania**, blood of, buffer capacity of, III, 8.  
 changes in, induced by poisons, III, 571.  
 glycogen in, III, 85.
- Prodigiosin**, constitution of, II, 207.
- Progesterone**, activity of, uterine fat as indicator of, III, 602.  
 bleeding due to, duration of, in castrated macaques, III, 132.  
 conversion of, into pregnanediol, in rabbit, III, 891.  
 effect of, on female and male mice, III, 750.  
 on genitals of monkeys, III, 234.  
 on mammary glands of male rabbits, III, 388.  
 on menstrual cycle, III, 315.  
 on ovaries and embryos of mice in early pregnancy, III, 750.  
 on pituitary lactogen and mammary glands of ovariectomised rats, III, 813.  
 on renal excretion of creatinine, vitamin-C, and water, III, 145.  
 on sex organs and placenta production in guinea-pigs, III, 813.  
 in mammary carcinoma, III, 401.  
 inhibition of copper-induced ovulation by, in rabbits, III, 234.  
 metabolic action of, III, 134.  
 morphogenetic action of, effect of administration method on, III, 136.  
 oxidation of, by persulphuric acid, II, 366.  
 percutaneous potency of, III, 750.  
 protective action of, in adrenalectomised mice exposed to low temperatures, III, 809.  
 treatment with, effect of, on body weight and work performance of adrenalectomised rats, III, 595.  
 fat distribution in castrate rabbits after, III, 750.  
 of abortion, III, 135.  
 of mastitis, III, 135.  
 of meno-metrorrhagia and ovarian sterility, III, 386.  
 of nervous tension states, III, 526.  
 uterine hæmorrhage induction by, III, 134.
- Progesterone**, vaginal response to, III, 454.  
 with oestradiol benzoate, uterine vascular changes due to, in castrated rabbits, III, 132.
- Progesterone**, 6(a)-hydroxy-, acetyl derivative, II, 103.  
 17(β)-hydroxy-, synthesis of, II, 368.
- Progestin**, blood assay for, in pregnant women, III, 135.  
 metabolism of. See under Metabolism.
- Prolactin**, III, 747.  
 assay of, III, 231.  
 crop-sac and viscera response to, in pigeons, III, 310.  
 effect of, on weight of genitals and viscera of cockerels, III, 600.
- Prolan**, assay of, by ovarian weight increase, III, 750.
- Proliferation**, cell injury in relation to, III, 149.
- Polycopene**, II, 293; III, 863.
- Prom**, from tangerine tomato pulp, II, 126.
- Promicoceras marstonense**, ammonite, growth changes in, III, 866.
- Promin**, effect of, on blood in tuberculosis, III, 838.  
 treatment with, of malaria, III, 479.  
 of tuberculosis, III, 707, 919.
- Prontosil**, effect of, on immunity, III, 918.  
 treatment with, of endocarditis, III, 545.
- Propaldehyde**, decomposition of, thermal, in presence of propylene, I, 402.
- Propane**, critical data and equilibrium of, mixed with isopentane, I, 358.  
 equilibrium of, with methane, I, 368.  
 with methane and n-pentane, I, 367.  
 with propylene, I, 367.  
 reaction of, with chlorine and sulphur dioxide in ultra-violet light, II, 245.  
 viscosity of, I, 357.
- Propane**, *αγ*-dichloro-*αβ*-dibromo-*αβγγ*-tetrafluoro-, *αβγ*-trichloro-*αβγγ*-tetrafluoro-, and tetrachlorotetrafluoro-derivatives, II, 126, 127.  
*aaa*-trichloro-*γ*-bromo-, II, 71.  
 chlorofluoro-derivatives, II, 71.  
*a*-chloro-*aa*-difluoro-, *mono*-, *di*-, *tri*-, and *penta*-chloro-*aaa*-trifluoro-, *ββγγ*-tetrachloro-*aaay*-tetrafluoro-, *ββγ*-trichloro-*aaayy*-pentafluoro-, and *aaa*-trifluoro-, II, 294.  
*aaβ*-trichloro-*αβγγγ*-pentafluoro-, *aaaβ*-tetrachloro-*βγγγ*-tetrafluoro-, and *aaaββ*-pentafluoro-*γγγ*-trifluoro-, II, 127.  
 fluoro-derivatives, II, 126.  
*γ*-hydroxy-*αβ*-dithiol-, and *βγ*-di-hydroxy-*α*-thiol-, and their derivatives, II, 247.  
*a*-nitro-, vapour pressure of mixtures of chlorobenzene and, I, 24.  
*a*-thiocyano-, II, 245.
- cycloPropane**, adrenolytic action of, III, 51.  
 allergy to, III, 548.  
 anaesthesia with. See under Anaesthesia.
- cycloPropane**, 1:2-di-bromo-, II, 83.
- cycloPropanes**, formation of, from halides and sodium, II, 83.
- Propane-*αβ*-diol** arsenite, II, 343.
- Propane-*α*- and -*β*-sulphonamides**, II, 245.
- Propane-*β*-sulphonanilide**, II, 245.
- Propane-*αγ*-disulphonamide**, II, 245.
- Propane-*αγ*-disulphonanilide**, II, 245.
- Propane-*αγ*-disulphonic acid**, and its *m*-toluidine salt, II, 129.
- Propane-1-selenonic acid**, potassium salt, II, 430.
- Propane-*α*- and -*β*-sulphonamides**, II, 245.
- Propane-*β*-sulphonanilide**, II, 245.
- Propanols**, amino-, synthesis of, II, 278, 301.
- cycloPropanol**, derivatives of, II, 214.
- Propargyl** bromide, chloride, and iodide, structure of, by electron diffraction, I, 391.  
 derivatives, reactions of, II, 309.
- Propazone**, effect of, on cerebral metabolism in rats, III, 805.  
 on respiration of rat tissue, III, 703.  
 hypnotic properties of, III, 51.
- Propene**. See Propylene.
- isoPropenyl** derivatives, spectra of, Raman, I, 83.
- p-Propenylanisole**. See Anethole.
- Propionic acid**, condensation of, with pyrroles, II, 380.
- 1-Propio-2-methylnaphthalene**, II, 94.
- o-Propionamidodiphenyl**, *β*-bromo-, II, 115.

- Propionamidoquinolones**, 5-, 6-, and 8- $\beta$ -chloro-, II, 63.
- Propionhomoveratrylamide**,  $\beta$ -bromo-, II, 115.
- Propionic acid**, dissociation constants of, in aqueous ethyl and methyl alcohols, I, 328.  
in dioxan-water mixtures, I, 145.  
interfacial tension of solutions of, in heptane and cyclohexane, I, 142.  
lead diphenyl salt, II, 241.  
methylcyclohexyl and tolyl esters, saponification of, I, 243.  
sugar derivatives of, II, 79.  
vapour pressure of, I, 139.
- Propionic acid**,  $\alpha$ -chloro-, phenylhydrazine salt, II, 215.  
 $\beta$ -chloro-, *l*-menthyl ester, II, 392.
- isopropionic acid**, equilibrium of, with water, I, 329.  
properties of, I, 322.  
spectrum of, Raman, in aqueous mixtures, I, 315.
- Propionin**, toxicity of, in mice and rats, III, 636.
- Propionitrile**, hydrolysis of, in hydrochloric acid solution, I, 369.  
in mineral acid solutions, I, 369.
- Propionitrile**,  $\alpha$ -bromo-, optically active, II, 79.
- Propionyl chloride**, hydrolysis of, I, 369.
- 6-Propionyl-4-methylcoumarin**, 5-hydroxy-, II, 235.
- 1-Propionylphenobarbital**, II, 180.
- Propionylphenylcarbinol**, and its derivatives, II, 57.
- Propiophenone**, *p*-bromo-, azine and hydrazone, II, 398.  
 $\alpha$ -fluoro-, and its 2:4-dinitrophenylhydrazones, II, 66.
- Propioveratrone**,  $\alpha$ -hydroxy-,  $\beta$ -*d*-glucoside, and its tetra-acetate, II, 134.  
 $\beta$ -hydroxy-, and its acetyl derivative, II, 143.
- Propoxyacetoneitriles**, II, 300.
- Propoxybenzoic acids**,  $\beta$ -*n*-butylaminoethyl esters, hydrochlorides, II, 404.
- 5-Propoxybenzthiazoles**, 6-nitro-, II, 153.
- 4-*p*-*n*-Propoxybenzylideneamino-1-*p*-methoxybenzeneazaphthalene**, II, 361.
- $\alpha$ -isopropoxy-*p*-bromophenylacetic acid**, *p*-phenylphenacyl ester, II, 421.
- $\alpha$ -isopropoxyisobutyric acid**, and its *p*-phenylphenacyl ester, II, 421.
- 2-Propoxy-5:4'-diacetyldiphenyl ether**, and its semicarbazone, II, 362.
- $\alpha$ -Propoxydiphenyl ether**, II, 362.
- $\alpha$ -isopropoxymesitylacetic acid**, II, 421.
- Propoxymethyl alkyl ketones**, and their 2:4-dinitrophenylhydrazones, II, 300.
- $\alpha$ -isopropoxyphenylacetic acid**. See Mandelic acid isopropyl ether.
- $\alpha$ -isopropoxypropionic acid**, II, 421.
- $\alpha$ -isopropoxy-*p*-tolylacetic acid**, *p*-phenylphenacyl ester, II, 421.
- n*-Propyl alcohol**, dielectric properties of, adsorbed on titanium dioxide gel, I, 294.
- isopropyl alcohol**, equilibrium of, with nitromethane and water, I, 298.  
with water, I, 367.
- n*- and iso-Propyl alcohols**, equilibrium of, with cyclohexane and water, I, 398.
- isopropyl fluoride**, chloro-derivatives of, II, 71.
- cyclopropyl vinyl ether**, anaesthetic action of. See under Anaesthetics.
- $\beta$ -Propylaminoisobutyl alcohols**, and their *p*-nitrobenzoates, II, 283.
- 4-*n*-Propylaminophenylphosphinic acid**, 3-amino-, and 3-nitro-, II, 122.
- n*-Propyl-*n*-amylmalonic acid**, diethyl ester, II, 247.
- Propylamine**, picrate, II, 301.
- p*-Propylbenzenesulphonamides**, II, 136.
- 2-*D*-erythroPropylbenzimidazole**, trihydroxy-, II, 396.
- $\beta$ -cycloPropylbutadiene**, II, 252.
- $\beta$ - $\alpha$ -*n*-Propyl-*n*-butylaminoethyl alcohol**, and its picrate, II, 394.
- 4-*n*-Propyl-4-*n*-butylhydantoin**, II, 271.
- isopropylbutylmalonic acids**, diethyl esters, II, 247.
- $\omega$ -*n*-Propylcamphene**, and its derivatives, II, 266.
- 4-Propylcoumarin**, 7-hydroxy-, and its derivatives, II, 375.
- 5:7- and 7:8-dihydroxy**, and their derivatives, II, 375.
- 2'-isoPropyldiphenyl-2-carboxylic acid**, 2'- $\alpha$ -hydroxy-, and its salts, asymmetric transformation of, II, 312.
- Propylene**, equilibrium of, with ethylene, I, 23.  
with propane, I, 367.  
heat capacity of, I, 232.  
inhibition by, of free radical chain reactions, I, 402.  
polymerisation of, by free alkyl radicals, I, 270.  
vapour, solubility of, in water in presence of detergents, I, 395.
- Propylene**,  $\alpha\alpha$ - and  $\alpha\beta$ -dichloro- $\gamma\gamma\gamma$ -trifluoro-, II, 294.
- 4 $\alpha$ -Propylene**,  $\beta$ -chloro- $\alpha\alpha\gamma\gamma\gamma$ -pentafluoro-,  $\alpha\beta$ -dichloro- $\gamma\gamma\gamma$ -trifluoro-,  $\beta\gamma$ -dichloro- $\alpha\alpha\gamma\gamma$ -tetrafluoro-,  $\alpha\alpha\beta$ -trichloro- $\gamma\gamma\gamma$ -trifluoro-,  $\alpha\alpha\beta\gamma$ -tetrachloro- $\gamma\gamma$ -difluoro-, and  $\alpha\alpha\beta\gamma\gamma$ -penta-chloro- $\gamma$ -fluoro-, II, 127.  
 $\alpha\gamma$ -dichloro- $\alpha\beta\gamma\gamma$ -tetrafluoro-, II, 127.
- cycloPropylene**, preparation of, II, 83.
- Propylene glycol**, effect of, on oxygen consumption, III, 632.  
toxicity of, in rats, III, 636.  
vapour, protection of mice with, from influenza virus, III, 708.
- Propylene  $\alpha\beta$ -glycol**, determination of, mixed with ethylene glycol and glycerol, II, 276.
- Propylene oxide**, reaction of, with magnesium *tert*-butyl chloride, II, 72.
- $\alpha\gamma$ -Propylenedi-1-phenobarbital**,  $\beta$ -hydroxy-, II, 180.
- Propylenethiocarbamides**, detection of, II, 212.
- 19-*n*-Propyl-17-equilenones**, 3-hydroxy-, and their methyl esters, II, 105.
- 2-*n*-Propylfuran**, 2- $\alpha$ - and  $\beta$ -amino-, and their derivatives, II, 373.
- n*-Propyl- $\beta$ -*d*-glucoside**, and  $\gamma$ -iodo-, and their tetra-acetates, II, 134.
- $\beta$ -*n*- and iso-Propylglucosides**, II, 351.
- n*-Propyl- $\beta$ -*d*-glucoside- $\gamma$ -sulphonic acid**, ethyl ester and sodium salt, and their derivatives, II, 134.
- $\beta$ -*n*-Propyl-*n*-heptane**,  $\alpha\gamma$ -diamino-, and its dihydrochloride, II, 168.
- 5''-Propylhexahydrocannabinol**, II, 236.
- n*-Propylhexylamine**, and its hydrochloride, II, 288.
- Propylhexylaminomethyl-6-methoxy-4-quinolylcarbinol**, and its dipicrate, II, 288.
- isopropylhydrazomethane**, and its picrate, II, 4.
- 1:2-isoPropylidene-3:4-dimethylmannose**, II, 81.
- 1- $\beta\gamma$ -isoPropyldenedioxypropylamine**, II, 344.
- d*(+)-isoPropyldenediglycerol  $\alpha'$ -methyl and  $\alpha'$ -phenylmethyl ethers**, II, 129.
- isoPropyldidenemesoinositol**, and its tetra-acetate, II, 310.
- 2:3-isoPropylidene-4-2':3':4':6'-tetra-acetyl- $\beta$ -glucosido-*D*-mannosan**, II, 80.
- cycloPropylmethylacetylenylcarbinol**, II, 252.
- 2-Propyl-3-methyl- $d^2$ -cyclopentenone**, and its semicarbazone, II, 363.
- cycloPropylmethylvinylcarbinol**, and its dehydration, II, 252.
- 4-Propylmorpholine**, 4- $\gamma$ -hydroxy-, and its derivatives, II, 278.
- Propylnonylamine**, and its hydrochloride, II, 288.
- 2-Propylphenol**, 5-amino-, and its 5-acetyl derivative, II, 281.
- 4-*n*-Propylphenol**, 3-amino-, and 3-nitro-, II, 281.
- 16-isoPropyl-4 $\beta$ -pregnen-3( $\beta$ )-ol-20-one**, and its acetate, II, 322.
- 16-isoPropylprogesterone**, II, 322.
- 1-*n*-Propylpyrrol-5-one-2-acetic acid**, ethyl ester, II, 426.
- 4-*n*-Propylquinoline**, 4- $\omega$ -4- $\beta$ -diamino- $\alpha$ -hydroxy-, and 8- $\omega$ -4- $\beta$ -dinitro- $\alpha$ -hydroxy-, II, 150.
- 5''-Propyl-3':4':5':6'-tetrahydrocannabinol**, II, 236.
- 4-*n*-Propylthiazole**, 2-amino-, and its 2-*p*-acetylbenzenesulphonamide, II, 153.
- Propylthiol**,  $\beta$ -chloro-, and  $\beta$ -hydroxy-, II, 247.
- $\eta$ -*n*-Propyl-4 $\delta\theta$ -tridecadi-in- $\eta$ -ol**, II, 246.
- cycloPropyltrimethylammonium iodide**, II, 83.
- isoPropyl  $\alpha\gamma\gamma$ -trimethyl- $\alpha$ -*tert*-butyl-*n*-butyl ketone**, II, 348.
- $\beta$ -Propyltrimethylene glycol**, and its diacetate, II, 389.
- $\alpha$ -isoPropylisovaleramide**,  $\alpha$ -hydroxy-, II, 35.
- $\alpha$ -*n*-Propyl-*n*-valeric acid**,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- Proserine**. See Phenyltrimethylammonium methosulphate, *m*-hydroxy-.
- Prostate**, adenocarcinoma of, occult, incidence of, after 50 years of age, III, 466.  
cancer of, in dogs, III, 824.  
choline-esterase of, mono- and di-amine-oxidase in, III, 893.  
corpora amylacea in, chemical composition of, III, 126.  
effect on, of adrenalectomy and deoxycorticosterone, in castrated rats, III, 307.  
of oestrogenic stimulation in infants, III, 131.  
embryonic differentiation of, in opossums after castration, III, 126.  
enlarged and normal, cholesterol content of, III, 903.  
enlargement of, in relation to androgen deficiency, III, 690.  
hypertrophy of, treatment of, with stilboesterol, III, 523.  
implants of, intra-ocular, response of, to gonadotropic hormone administration, III, 384.  
lesions of, due to crystalline oestrone pellets, III, 234.  
transplants of, reactions of, in male and female rats, III, 455.
- Prostigmine**, effect of, and adrenaline and ephedrine on muscle, III, 804.  
on central nervous system, intrathecally injected, in man, III, 882.  
on deafness, III, 520.  
on neuromuscular atrophy and regeneration, III, 548.  
on serum- and muscle-potassium, III, 548.  
on urinary excretion of potassium, III, 771.  
treatment with, of cardiopasm, III, 317.  
of impaired hearing, III, 227.  
of tinnitus, III, 682.
- See also Phenyltrimethylammonium methosulphate, *m*-hydroxy-.
- Protargol**, staining with, of paraffin sections, III, 7.
- Proteins**, amino-nitrogen liberated from, in Van Slyke apparatus, II, 386.  
animal, coagulation of, by copper salts, influence of Congo-red on, I, 61.  
anion affinity constants of, I, 238.  
as pathogenic agents, III, 756.  
basic, toxicity of, III, 843.  
blood-. See under Blood.  
carbon suboxide and, III, 292.  
chemistry of, II, 210, 276.  
chlorophyll complexes of, III, 722.  
colloidal, sols, with bile salts, III, 715.  
conjugates of, with carbimides of aromatic hydrocarbons, II, 123.  
copper-containing, from cow's milk, III, 821.  
corpuseular, valency of, III, 846.  
decomposition and viscosity of, II, 337.  
denaturation of, I, 173; III, 416, 775.  
by heat, II, 40.  
denatured, X-ray structure of, II, 338.  
determination in, of amino-acids, I, 160.  
of cystine, II, 292.  
determination of, digestion mixture for, III, 952.  
in blood, by micro-Kjeldahl and direct nesslerisation, III, 92.  
in plasma, by sulphosalicylic acid reaction, III, 665.  
in serum, III, 574, 665.  
in tissue fluids, III, 503.  
spectroscopically, II, 340.  
dietary, in relation to lead poisoning, III, 635.  
privation of, III, 326.  
dry, effects of heat on, I, 105.

- Proteins**, electrophoresis of, II, 158.  
in solution, III, 341.  
emulsifying power of, I, 295.  
extraction of, by chloroform emulsification, III, 724.  
fission products of, adsorption of, II, 301.  
food, utilisation of, III, 404.  
from pars neuralis, ox, with oxytocic, pressor, and diuresis-inhibiting properties, III, 688.  
hydrolysis of, by acids, II, 158.  
products of, mol. wt. of, II, 337.  
treatment with, of hypoproteinæmia, III, 197.  
tryptophan-containing, for intravenous use, III, 757.  
in cerebrospinal fluid. See under Cerebrospinal fluid.  
in flour. See under Flour.  
intake of, by Swiss sportsmen, III, 38.  
effect of, on calcium and magnesium absorption, III, 906.  
on growth, longevity, and reproduction, at different calcium levels, III, 826.  
lipin complexes in, III, 463.  
metabolism of. See under Metabolism.  
milk. See under Milk.  
muscle-. See under Muscle.  
native, fibres produced from, II, 122.  
framework of, III, 775.  
nutritional value of, III, 251.  
papilloma-virus. See under Papilloma virus.  
pea-nut. See under *Arachis hypogæa*.  
plasma-. See under Blood-plasma.  
polarography of, III, 846, 904.  
polycyclic rings introduced into, II, 118.  
preparation of, crystalline, II, 241.  
pure, II, 241.  
reaction of, with carbon suboxide, II, 241.  
relation of, to calcium salts, III, 775.  
requirement of, minimum, for man, III, 699.  
serum-. See under Blood-serum.  
spectra of, absorption, ultra-violet, I, 40.  
stoichiometry of, and X-rays, I, 231.  
structure of, I, 386; II, 32, 291.  
synthesis of, use of casein digest for, parenterally administered, III, 623.  
value of urea in, in sheep, III, 759.  
undigested, absorption of, from stomach and œsophagus, III, 240.  
vitamin-B<sub>1</sub>-sparing action of, III, 761.  
wheat flour. See under Flour, wheat.  
yeast-, nutritive value of, as supplement to maize-protein for pigs, III, 759.
- Proteinases**, synthesis by, III, 59.
- Proteinuria**, Bence-Jones, and its effects on kidney, III, 246.
- Proteus**, utilisation by, of nicotinic acid and pyridine compounds, III, 348.
- Proteus morganii**, metabolism of, effect of pantothenic acid on, III, 854.
- Proteus vulgaris**, growth of, action on, of pyridine-3-sulphonic acid and thiazole-5-carboxylamide, III, 647.
- Prothrombin**, added to plasma, assay recovery of, III, 9.  
assay of, III, 195.  
clotting time of, determination of, III, 90, 664.  
effect of leicithinised venom on, III, 664.  
Quick's test for, effect of excess calcium on, III, 90.  
deficiency of, effect on, of naphthaquinone, III, 194.  
of vitamin-D, in rats, III, 664.  
of vitamin-K, in bile-fistula dog, III, 702.  
in pulmonary tuberculosis, III, 664.  
destruction of, in relation to vitamin-K storage, III, 9.  
detection of, III, 798.  
in plasma, III, 573.  
microchemically, III, 573.  
formation of, after X-ray injury to bone-marrow, III, 798.  
bile and food in intestines in relation to, III, 798.  
index, effect of diet of newborn infant on, III, 194.  
level of, effect on, of 2-methyl-1:4-naphthaquinone in infants, III, 9.
- Prothrombin**, level of, in chicks from vitamin-K injected eggs, III, 9.  
loss of, caused by rare earths and effect of vitamin K<sub>2</sub>, III, 873.  
plasma-. See under Blood-plasma.  
thrombin and, III, 798.  
See also under Blood.
- Protoactinium**, spectrum of,  $\beta$ -ray, I, 383.
- Protocalliphora azurea**, toxicity to, of anils, II, 399.
- Protons**, angular distribution of, scattered by neutrons, I, 286.  
beams of, production of, I, 127.  
from deutron bombardment of <sup>13</sup>C, I, 33.  
high-speed, range and ionisation of, I, 129.  
interaction of, with neutrons, I, 382.  
production of, by cosmic rays at 14,125 feet, I, 287.  
scattering of, by deuterium, I, 162.  
by protons, I, 78, 382.
- Protoplasm**, asymmetric organisation of, in relation to topology, III, 416.  
streaming of, effect of auxins on, III, 861.  
synthesis of, effect of metals on, III, 635.  
viscosity of, effect of electric current on, in sea-urchins, III, 84.
- Protoporphyrin**, occurrence of, in bird's eggshells, III, 901.
- Protoporphyrin**, hydroxy-, and its benzoyl derivative, dimethyl esters, II, 289.
- Protoporphyrin-IX** from faeces of rats, III, 394.
- Protopræterus æthiopicus**, pituitary of, III, 189.
- Protopræterine**, dehydrogenation of, II, 240.
- Protozoa**, parasitic, micro-technique for, III, 556.  
soil, toxicity of bacterial metabolic products to, III, 421.
- Protyrosinases**, III, 265.  
activation of, in presence of anions and cations, III, 847.  
activators of, from grasshopper egg oil, III, 777.  
in eggs. See under Eggs.
- Pruritus**, anogenital, in climacteric, treatment of, with testosterone propionate, III, 690.  
senile, treatment of, with, androgens and œstrogens, III, 815.
- Pruritus ani**, treatment of, with mercury sulphide tattooing, III, 926.
- Pruritus vulvæ**, treatment of, by infiltration, III, 925.
- Pseudobrookite**, Black Range, New Mexico, I, 345.
- Pseudocassia transcaucasensis**, bark of, constituents and pharmacology of, III, 336.
- Pseudomonas fluorescens**, growth factor from, III, 491.
- Pseudomonas pyocyanea**, growth of, in rice bran extracts, III, 146.
- d-Ψicose**, and its methylated derivatives, II, 395.
- Psittacosis**, immunity and phagocytosis in, III, 348.  
virus of, and of lymphogranuloma venereum and meningopneumonitis, III, 561.  
infection by, of respiratory tract of chick embryos, III, 68.
- Psoriasis**, treatment of, with deproteinated pancreatic extract, III, 817.
- Psychiatry**, biochemistry in relation to, III, 806.  
"delivinal sodium" as sedative in, III, 925.  
effect of excitatory amino-compounds in, III, 883.  
leucocytosis in, in relation to emotional state, III, 796.  
military, Rorschach method and its uses in, III, 884.  
Rorschach symbols in, comparative table of, III, 884.  
Shipley-Hartford test for "deterioration" in, III, 884.
- Psychosis**, after use of marihuana, III, 552.  
associated with vitamin-B deficiency, III, 740.  
endogenous, metabolism in, in relation to liver function, III, 18.  
occurrence of, in both parental lines, III, 216.
- Psychosis**, incidence of, and other mental abnormalities in families of schizophrenic patients, III, 884.  
involutional, treatment of, with shock, III, 379.  
non-diabetic, effect of insulin on, III, 586.  
treatment of, neurosurgical, III, 217.  
with electric shock, III, 447.  
with sulphosin, III, 48.
- Psychotics**, involutional, treatment of, with testosterone propionate, III, 128.
- Pterins**, II, 238.
- Pterophine**, action of, III, 772.
- Pterophneic acid**, II, 66.
- Pubertas præcox**, effect of, on age when walking occurs, III, 361.
- Puberty**, metrorrhagia in, III, 139.  
precocious, due to ovary tumour, III, 453.
- Puer**. See **Fæces**.
- Puerperal fever**, vaccination against, III, 942.
- Puerperium**, vitamin-C lowering during, III, 136.
- Pugetia producta**, nervous system of, III, 107.
- Pulegone**, condensation products of, with olivetol and orcinol, II, 202.  
physical constants of, I, 388.
- Pulenone**, and its derivatives, II, 228.
- Pullorum diser e**, blood tests for, III, 88.
- Pumps**, suction trap for, I, 343.
- Puncture**, lumbar, cerebrospinal fluid changes after, III, 22.
- Pupillography**, III, 679.
- Pupillometer**, entoptic, III, 222.
- Purgatives**, liquid paraffin, effect of, harmful, III, 769.
- Purine**, free, content of, in organs, III, 900.  
Purine, 6:8-diamino-2-hydroxy-, spectrum of, absorption, ultra-violet, I, 386.
- Purine nucleosides**, constitution of, II, 237.
- Purpura**, due to vitamin-K deficiency in anorexia nervosa, III, 798.  
thrombocytopenic, after lalvarsan, III, 770.  
associated with discoid lupus erythematosus and renal glomerular changes, III, 91.  
treatment of, with X-rays and splenectomy, III, 11.
- Purpura Majocchi**, clinical and hæmatological observations in, III, 511.
- Purpurin 2:4-diacetate**, II, 149.  
dimethyl ester, II, 65.
- Purpurins**, II, 65, 274.
- Purpurin-18**, methyl ester, derivatives of, II, 181, 383.
- neoPurpurin 4**, II, 65.
- Purpurogallase**, preparation of, III, 266.
- Pus**, cells of, refractile granule motility in, in man, III, 797.
- Pyelography**, pharmacological action of contrast media for, III, 637.
- Pyelo-renal backflow**, III, 638.
- Pyknolepsy**, III, 448.
- Pylorus**, antrum of, reaction and neutralising ability of contents of, in dogs on Ewald meal, III, 753.  
stenosis of, hypertrophic, congenital, III, 894.
- Pyraanthia angustifolia**, fruit of, pro-γ-carotene and polycopene from, III, 863.
- Pyramidal tract**, human, III, 215, 885.  
spinal mechanism of, in cats, III, 518.
- Pyramidone**, chills and fever produced by, III, 843.  
determination of, II, 244.  
effect of, on leucocytes, III, 89.  
treatment with, of anæmia, III, 191.
- Pyrazine series**, syntheses in, II, 152.
- Pyrazole-4:5-dioarboxanilide**, II, 273.
- Pyrazolines**, from dibenzylideneacetones, oxidation of, II, 379.
- Pyrazolone**, derivatives of, II, 204, 380.
- Pyrazol-5-one-3-propionic acid**, and its hydrazide and methyl ester, II, 426.
- 5-Pyrazolylacetylene**, and its picrate, II, 334.
- 3-Pyrenoylalanine**, and its derivatives, II, 118.
- 3-Pyrenylacetamide**, II, 50.
- β-3-Pyrenylacrylic acid**, α-amino-, benzoyl derivative, and its derivatives, II, 118.
- β-3-Pyrenylaminocrotonic acid**, ethyl ester, II, 271.
- β-3-Pyrenyl-n- and -iso-butyric acids**, II, 50.

- 3-Pyrenylcarbinol, II, 50.  
 $\alpha$ -3-Pyrenylethyl alcohol, II, 50.  
 3-Pyrenylmethylmalonic acid, dimethyl ester, II, 50.  
 3-Pyrenylmethylmethylmalonic acid, dimethyl ester, II, 50.  
 $\beta$ -3-Pyrenylpropionic acid, II, 50.  
 $\beta$ -3-Pyrenylpropionic acid,  $\alpha$ -amino-, benzoyl derivative, and its derivatives, II, 118.  
 $\gamma$ -3-Pyrenyl-*n*-valeric acid, II, 50.  
 Pyrethrazulene, II, 137.  
 Pyrethrins, synergistic action of sesamin with, III, 636.  
 Pyrethrosin, distillation of, with zinc dust, II, 137.  
 Pyrethrum flowers, active constituent of, III, 787.  
 Pyridine, compounds of, anti-pellagra, effect of ingestion of, on fluorescent substance excretion in urine, III, 471.  
 hydrochloride, fission of phenolic ethers by, II, 309, 340.  
 salts of, with *p*-nitrobenzylsulphonic acids, II, 328.  
 seleuocyanate and thiocyanate, I, 246.  
 solubility of mixtures of benzene, water, and, I, 267.  
 Pyridine, 2-amino-, sodium  $\alpha$ -methylenebisulphite, II, 222.  
 3-amino-, and 5-bromo-3-amin-, II, 240.  
 2-*o*-*p*-diamino-, 2-benzoyl derivative, II, 363.  
 5-amino-2-thiol-, 5-acetyl derivative, II, 423.  
 $\beta$ - $\gamma$ -substituted derivatives, *ortho*-effect in, II, 333.  
 3:4-substituted derivatives, II, 328.  
 2-thiol-, derivatives of, II, 422.  
 Pyridine series, II, 331.  
 cyanine dyes of, II, 329.  
 Pyridine nucleotides, inactivation of, by animal tissues, III, 935.  
 by tissues *in vitro*, III, 489.  
 Pyridine-3-acetic acid, II, 114.  
 and its derivatives, II, 203.  
 Pyridine-4-carboxylbenzenesulphonhydrazide, II, 422.  
 Pyridinecarboxylic acids, esters, anaesthetic action of, II, 422.  
 Pyridine-2:3-dicarboxylic acid, esters of, II, 422.  
 Pyridine-3-glyoxylic acid, 2-amino-. See 7-Pyrisatoic acid.  
 Pyridine-2-sulphonamides, 5-amino-, substituted derivatives, II, 422.  
 Pyridine-2-sulphonamidoiodopyridine, 5-amino-, and its acetyl derivative, II, 423.  
 Pyridine-2-sulphonamidopiperazine, 5-amino-, and its acetyl derivative, II, 423.  
 Pyridine-2-sulphonamidopyridine, 5-amino-, and its acetyl derivative, II, 423.  
 Pyridine-2-sulphonamidothiazole, 5-amino-, and its acetyl derivative, II, 423.  
 Pyridine-2-sulphonanilide, 5-amino-, and its acetyl derivative, II, 423.  
 Pyridine-2-sulphoguanidide, 5-amino-, and its acetyl derivative, II, 423.  
 Pyridinium salts, fission of phenolic ethers by, II, 357.  
 Pyridium, in urinary infections, sediment variation after administration of, III, 33.  
 toxicity reduction of 2-sulphanilamidopyrimidine by, in mice, III, 628.  
 3-Pyrido[4:3:2-*de*]quinoline, 5-hydroxy-, II, 37.  
 2-Pyridone, 5-amino-, 5-acetyl derivative, II, 423.  
 Pyridoquinolines, chloro-, and hydroxy-, II, 206.  
 5:8:2:3'-Pyridoquinolinium methosulphate, II, 206.  
 Pyridoxine, deficiency of, anaemia in dogs due to, III, 329.  
 green pigment-producing compound in urine in, III, 762, 899.  
 in rats, III, 40, 701.  
 hydrochloride, sensitivity to, III, 39.  
 treatment with, of muscular weakness, III, 583.  
 treatment with, of acne, III, 910.  
 See also Vitamin-B<sub>6</sub>.  
 $\psi$ -Pyridoxine, III, 648.  
 Pyridyl-3-acrylic acid, and its derivatives, II, 203.  
*dl*- $\beta$ -Pyridylalanines, isomeric, II, 422.  
 Pyridyl-3-aldehyde, and its derivatives, II, 203.  
 Pyridylalkylamines, pharmacology of, III, 926.  
 8-2'-Pyridylamino-5:6-benzoquinoline, II, 271.  
 4-2'-Pyridylamino-6-methoxy-2-methylquinoline, II, 379.  
 Pyridyl-3-carbinol, and its derivatives, II, 203.  
 $\alpha$ -3-Pyridylcinnamic acid, and its methyl ester, II, 203.  
 Pyridyl-3-diethylacetal, II, 203.  
 $\beta$ -2-Pyridyldiethylamine dihydrochloride, II, 113.  
 $\beta$ -2-Pyridylethylamine, and its derivatives, II, 113.  
 $\beta$ -4-Pyridylethylamine, and its derivatives, II, 113.  
 $\beta$ -2-Pyridylethylmethylamine dihydrochloride, II, 113.  
 2-Pyridylglycine, II, 30.  
 4(5)-Pyridylglyoxaline, II, 381.  
 4-Pyridylglyoxaline-5-carboxylic acid, and 2-hydroxy-, and 2-thiol-, ethyl esters, II, 381.  
 $\beta$ -2-Pyridylheptaldehyde diethylacetal, II, 38.  
 $\beta$ -2-Pyridylhexaldehyde diethylacetal, II, 38.  
 4-Pyridylmethyl bromide hydrobromide, II, 422.  
 5-3'-Pyridylmethylthiohydantoin, II, 422.  
 $\beta$ -2-Pyridylpropaldehyde diethylacetal, II, 38.  
 $\beta$ -2-Pyridylpropionamide, II, 113.  
 $\beta$ -4-Pyridylpropionic acid, and its derivatives, II, 113.  
 $\beta$ -2-Pyridylisopropylmethylamine, and its dihydrochloride, II, 113.  
 2-Pyridylisothiocarbamide, 2-5-amino-, and 2-5-nitro-, hydrochlorides, II, 422.  
 Pyrimidine, spectrum of, absorption, ultraviolet, I, 81.  
 stimulating yeast fermentation, determination and metabolism of, in normal and leukemia patients, III, 731.  
 studies on, in older subjects, III, 470.  
 Pyrimidine, 5-amino-, chloroamino-, and 2-chloro-5-nitro-, II, 272.  
 Pyrimidines, II, 32, 151, 272, 331.  
 reducing, detection of, colorimetrically, II, 184.  
 sulphonamides of, II, 151.  
 Pyrimidine-5-carboxylic acid, 2-amino-, and its ethyl ester, and 2-chloro-, ethyl ester, 2-chloro-6-amino-, methyl ester, and 6-hydroxy-, and its ethyl ester, and 6-hydroxy-2-thiol-, ethyl ester, II, 331.  
 7-Pyrisatin, and its oxime, II, 206.  
 7-Pyrisatoic acid, II, 206.  
 Pyrites, mineralogy and origin of, in coal, I, 380.  
 properties of, I, 346.  
 Pyrocatechol alkyl ethers, II, 193.  
 Pyrocatecholdisulphonic acid, sodium antimony salt. See Fuadin.  
 Pyrocatechol-oxidase. See under Oxidase.  
 Pyrocatechol-4-sulphonamide, from metabolism of *p*-hydroxybenzenesulphonamide in rabbits, II, 140; III, 334.  
 Pyrocatechol-4-sulphonanilide, and its diacetyl derivative, II, 140.  
 Pyrocatechol-4-sulphon-*m*-chloroanilide, and its diacetyl derivative, II, 140.  
 Pyrocatechol-4-sulphon- $\beta$ -naphthylamide, and its diacetyl derivative, II, 140.  
 Pyrodin, erythrocyte destruction and regeneration by, III, 366.  
 Pyrogallolcarboxylic acid, kinetics of, I, 369.  
 Pyrogens, formation of, by bacteria, III, 643.  
 test for, in infusion fluids, III, 663.  
 $p$ -Pyromellitdiazone, II, 96.  
 $p$ -Pyromellitide, 3:2'-diamino-, diacetyl and dibenzoyl derivatives, 3:3'-dichloro-, and 3:3'-dihydroxy-, diacetyl derivative, II, 96.  
 Pyrometers, Biopitix, temperature measurement with, colour vision in, I, 249.  
 radiation, I, 73.  
 Pyromucic acid, ethyl ester, reaction of, with formaldehyde, II, 373.  
 2-Pyrone, derivatives, action of diazomethane on, II, 29.  
 Pyronine dyes from succinic acid, II, 118.  
 Pyrophosphatase in plants, III, 936.  
 Pyroporphyrin, and 6-bromo-, and their methyl esters, and their derivatives, II, 65.  
 Pyroporphyrins, reactions of, II, 65.  
 Pyroxenes of mafic magmas, I, 251.  
 7-Pyroxindole, and 3-amino-, and its salts, II, 206.  
 Pyroglauco bilin, dimethyl ester, II, 382.  
 Pyroketones, II, 204.  
 Pyrrole, ammonium character of, and its derivatives, II, 376.  
 colouring matters from, spectra of, absorption, I, 352.  
 derivatives, hydrogenation of, II, 115.  
 deuterium derivatives of, II, 422.  
 spectrum of, and its deuterium derivatives, I, 313.  
 Raman, I, 289.  
 Pyrroles, condensation of, with propiolic and pyruvic acids, II, 380.  
 Pyrrole series, II, 271, 330, 380.  
 Pyrrole-blue dyes, constitution of, II, 63.  
 Pyrrolenine-2-acetic acid, 5-hydroxy-, ethyl ester, II, 426.  
 2:5-Pyrrolenylenedi-3-1-methylisatin, II, 65.  
 Pyrrolidine, reaction of, with bromobenzylideneacetophenones, II, 149.  
 Pyrrolidine-2-acetic acid, ethyl ester, and its pierolonate, II, 287.  
 Pyrrolidine-1:2-diacetic acid, ethyl ester, II, 287.  
 $\alpha$ -Pyrrolidino- $\beta$ -phenylacrylophenone, II, 149.  
 $\alpha$ -Pyrrolidino- $\beta$ -phenylpropiofenone,  $\alpha$ -bromo-, II, 149.  
 $\alpha$ -Pyrrolidino- $\beta$ -tetrahydroquinolino- $\beta$ -phenylpropiofenone, II, 149.  
 2-(2'-Pyrrolidone-5'-carboxy-4''-aminobenzene-sulphonamido)pyridine, II, 222.  
 2-Pyrrolidone-5-carboxy- $\alpha$ -naphthalide, II, 222.  
 2-Pyrrolidone-5-carboxy- $\beta$ -nitroanilide, II, 222.  
 2-Pyrrolidone-5-carboxy-*m*-toluidide, II, 222.  
 Pyrrolones, synthesis of, II, 426.  
 Pyrrrol-5-one-2-acetic acid, amide and ethyl ester, II, 426.  
 Pyrrmethenes, hydroxy-, preparation of, II, 333.  
 Pyroporphyrin, 6-bromonitro-, ester, and chloro- and nitro-derivatives, II, 152.  
 $\alpha$ -2-Pyrrylmandelic acid,  $\alpha$ -amino-, acetyl derivative, ethyl ester, II, 64.  
 3:2'-Pyrryl-1-methyldioxindole, II, 63.  
 Pyruvic acid, condensation of, with pyrroles, II, 380.  
 condensation reactions of, effect of aneurin on, III, 470.  
 determination of, collection of blood for, III, 733.  
 dissimilation of, carbon dioxide fixation by pigeon liver in, III, 318.  
 ethyl ester, *p*-acetylphenylhydrazone, II, 378.  
 in blood. See under Blood.  
 8-*p*-nitrophenylsemicarbazone, II, 169.  
 polyneuritic convulsions from, III, 700.  
 relationship between, and lactic acid in blood, and its use in aneurin deficiency in pigeons, III, 700.  
 sodium salt, rôle of, in ethyl alcohol metabolism, III, 915.

## Q.

- Q fever, infection with, in mice, III, 561.  
 inoculation of guinea-pigs with, III, 650.  
 Quadruplets, study of, III, 3.  
 Quantum mechanics, physical interpretation of, I, 256.  
 solution of problems in, I, 350.  
 Quantum theory, and electric charge, I, 224.  
 diffuse X-ray reflexions and, I, 229.  
 Lorentz invariance in, I, 192.  
 statistical approximation in, I, 6.  
 Quartz, crystalline and fused, optical transmission by, I, 225.  
 determination of, by hydrofluosilicic acid method, I, 112.  
 in minerals, I, 375.  
 gold. See Gold quartz.  
 outcrops of, I, 379.  
 piezo, in Canada, I, 160.  
 royle variety of, from Jharia coal field, I, 123.  
 sealing of windows of, into pyrex tubes, I, 308.



**Quartz**, spectrum of, near infra-red, I, 353.  
thermal energy of, I, 226.  
thickness of rigid water film on, I, 19.  
 **$\alpha$ -Quartz**, specific heat of, I, 138.  
**Quaternary compounds**, hydrolysis of, II, 164.  
**Quercetagerin**, and its derivatives, II, 48.  
methylation of, II, 30.  
**Quercetin**, 3:7:3':4'-*tetraacetate*, II, 149.  
determination of substances like, with photoelectric colorimeter, II, 292.  
**Quinaldine**, 6-nitro-, ethiodide, II, 240.  
**Quinaldines**, 3- and 4-amino-, syntheses with, II, 30.  
4-chloro-, reaction of, with ammonia, II, 287.  
**Quinaldine-6-sulphonamide**, preparation of, II, 331.  
**N-3'-Quinaldyl-2:5-dimethylpyrrole**, and its picrate, II, 31.  
**N-3'-Quinaldyl-2-phenyl-5-methylpyrrole-4-carboxylic acid**, ethyl ester, II, 31.  
 **$\beta$ -3-Quinaldylpropenyl methyl ketone**, II, 31.  
**Quinidine**, action of, on cold-blooded heart, III, 923.  
on coronary vessels, III, 841.  
on fibrillation threshold of mammalian ventricles, III, 769.  
treatment with, of auricular fibrillation, III, 709.  
**Quinine**, and its derivatives, III, 921.  
derivatives of, effect of, on growth rate of sarcoma in tissue culture, III, 768.  
organotropy of, for tissues of rats with Fujinawa's sarcoma, III, 698.  
determination of, in blood and tissues, III, 864.  
in mixtures with strychnine, II, 244.  
spectrophotometrically, II, 340.  
effect of, on metabolism of fasting dogs and patients with creatinuria, III, 376.  
fetal death from, parenterally administered, III, 54.  
ions, mobility of, I, 206.  
levels of, in blood and urine of hook-worm infected dogs, III, 924.  
methochloride, curarisation with, for prevention of traumatic complications in cardiazol shock therapy, III, 881.  
poisoning by. See under Poisoning.  
therapeutic incompatibility between, and sulphapyridine, III, 626.  
**N<sup>4</sup>-Quininoylsulphamylamide**, II, 222.  
**Quinitol**, semi-esters, preparation of, II, 309.  
**Quinizarin**, dibromo-derivatives, II, 25.  
6:7-dibromo-, II, 177.  
**Quinizarin-6-sulphonic acid**, sodium salt, use of, as acid-base indicator, I, 276.  
**Quinol**, adsorption of, by sugar charcoal, I, 235.  
alkyl ethers, II, 193.  
autoxidation of, influence of hydroxyl ions on, I, 176.  
 $\kappa$ -bromodecyl,  $\mu$ -bromododecyl, decamethylene, and dodecamethylene ethers, 2:5-dibromo-, II, 195.  
decamethylene ethers, II, 9.  
esters, Fries reaction with, II, 175.  
1-methyl ether, 2:6-diiodo-, II, 282.  
**Quinoline**, organo-metallic compounds of, II, 114.  
reduction of, electrolytic, II, 331.  
selenocyanate and thiocyanate, I, 246.  
synthesis of, Skraup, modified, II, 114.  
**Quinoline**, 6- $\omega$ -chloroamino-, acetyl derivative, II, 63.  
8- $\omega$ -chloroamino-, acetyl derivative, II, 63.  
2-chloro-4-hydroxy-, II, 378.  
8-hydroxy-, preparation of, II, 287.  
2:4-disubstituted derivatives, II, 378.  
**isoQuinoline**, derivatives, synthesis of, II, 31, 379.  
**isoQuinoline**, 1- and 4-amino-, and 4-bromo-, and their derivatives, II, 331.  
**Quinolines**, Friedel-Crafts acylation of, II, 377.  
**Quinolines**, hydroxy-, II, 424.  
**Quinoline series**, syntheses in, II, 150, 378.  
**Quinoline-4-aldehyde anil**, II, 288.  
**Quinolinealdehydes**, preparation of, with selenium dioxide, II, 114.  
**Quinoline-3-carboxylic acid**, amides of, II, 114.

**Quinoline-4-carboxylic acid**, 7-amino-2-hydroxy-, and its ethyl ester, II, 206.  
**Quinoline-8-carboxylic acid**, determination of copper with, I, 184.  
**Quinoline-2:4-dicarboxylic acid**, 6-chloro-, II, 288.  
**Quinoline-6-sulphonamide**, II, 331.  
**Quinoline-8-sulphonic acid**, 5-amino-, amide, and 5-nitro-, and its derivatives, II, 150.  
**Quinoline-8-sulphon-2'-pyridylamide**, 5-nitro-, II, 150.  
**Quinoline-8-sulphon-2'-thiazylamide**, 5-nitro-, II, 150.  
**Quinolsuccinein**, II, 119.  
**4:8'-Quinolylamino-6-methoxy-2-methylquinoline**, II, 379.  
**3-2'-Quinolylidibenzthiophen**, II, 62.  
**2-4-Quinolylethyl alcohol**, II, 150.  
**8-4'-Quinolylmethyleneamino-2-methoxy-4-methylquinoline**, II, 150.  
**Quinone**. See Benzoquinone.  
**Quinones**, action on, of thiophenols, II, 23.  
compounds of, with carbazoles, indole, and pyrroles, II, 377.  
reaction of, with metallic enolates, II, 255, 267.  
related to vitamin-E, reactions of, at dropping mercury cathode, III, 554.  
**Quinones**, hydroxy-, condensation of, with allylic alcohols, II, 149.  
*peri*-hydroxy-, inner metallic complexes of, II, 410.  
**Quinonemethides**, II, 255.  
formation of, in hardening of resins, II, 310.  
*o*-Quinonemethides, polymerisation of, II, 317.  
**Quinonoid state**, I, 318.  
**Quinuclidine**, spectrum of, Raman, I, 165.

## R.

**Rabbits**, organs and tissues of, body-weight distribution in, III, 186.  
sexual photoperiodicity in, III, 125.  
**Rabellon tablets**, treatment with, of Parkinsonism, III, 19.  
**Rabies**, diagnosis of, microscopically, III, 353.  
immunisation against, of dogs, III, 179.  
protection against, by antiviral serum, III, 856.  
vaccine, hypersensitivity of, III, 561.  
non-virulent, III, 650.  
virus, at Coquilhatville, sensitivity of white mice to, III, 353.  
street, culture of, III, 720.  
**Radiation**. See Rays.  
**Radicals**, free, chain reactions with, and their inhibition, I, 402.  
detection of, by mass spectrometer, II, 341.  
dipole moments of, I, 43.  
reactions of, I, 147.  
reactivity of, II, 393.  
optically-active, molecular rearrangements with, II, 312.  
organic, electron-sharing of, I, 99, 145.  
**Radioactive elements**. See under Elements.  
minerals, alteration of, I, 121.  
series,  $Z = N \pm 1$ , extension of, I, 33.  
substances, applications of, in biological chemistry, III, 713.  
calculation of activities of, I, 31.  
concentration and detection of, in abscesses, III, 334.  
disintegration of, I, 312, 383.  
use of, as tracers, in biology and medicine, III, 334.  
transformations, theory of, I, 313.  
**Radioactivity**, artificial, I, 5.  
completion of periodic system and, I, 255.  
distribution of helium and, in rocks, I, 121.  
emanation apparatus for, I, 28.  
of materials exposed in Salamanca, I, 350.  
of ocean sediments, I, 120.  
of rocks, I, 216.  
 **$\beta$ -Radioactivity**, decay of, I, 312.  
**Radiobiology**, activation of oxygen in, I, 304.  
**Radiochemistry**, I, 306.  
**Radio-chlorine**. See under Chlorine.

**Radiographs**, preservation of, on miniature film, III, 339.  
**Radioigraphy**, histological, III, 868.  
indirect, physical factors in, III, 553.  
of metallic substances, photometric contrast applied to, I, 377.  
reflexion, I, 377.  
**Radiology**, engineering and physics research in, III, 338.  
physics of, in relation to biology, III, 553.  
protection from X-rays in, III, 714.  
**Radiotherapy**. See Rays, treatment with.  
**Radio-thorium**. See under Thorium.  
**Radium**, bomb for, III, 933.  
determination of, photographically, I, 184.  
effect of carbonates and sulphates on, I, 262.  
emanation. See Radon.  
occurrence of, in sediments of Cayman Trough, I, 120.  
pads, treatment with, of skin diseases, III, 714.  
poisoning by. See under Poisoning.  
protection of, in air raids, I, 334.  
rays, bactericidal action of, III, 262.  
 $\beta$ -rays from, absorption of, in lead and platinum, I, 255.  
 $\gamma$ -rays from, measurement of, in roentgens, III, 932.  
screening of, during transportation, III, 339.  
treatment with, dosage control in, III, 639.  
dosage distribution in, III, 638.  
intracavitary, III, 930.  
of deafness, III, 683.  
of menopausal haemorrhage, uterine cancer after, III, 152.  
**Radium salts**, co-precipitation of barium salts and, I, 274.  
**Radium determination**:-  
determination of, in igneous rocks, I, 113.  
**Radium-C**, spectrum of, positron, I, 4.  
 $\gamma$ -ray, I, 3.  
**Radium-E**,  $\beta$ -rays from, I, 31.  
**Radon**, detection of, with proportional counter, I, 281.  
ointment, treatment with, of skin diseases, III, 714.  
treatment with, of radiation injuries, III, 929.  
**Raffinose hendecapropionate**, II, 79.  
**Ragweed**, pollen, allergen of, III, 355.  
extracts, constituents of, producing hay fever, III, 499.  
electrophoresis of, III, 934.  
Forssman antigen in, III, 499.  
immunology with, III, 356.  
intracutaneous tests with, III, 858.  
proteins, immunology of, III, 784.  
reagin-neutralising in, III, 71.  
treatment with, in children, III, 498.  
ultramicroscopy with, III, 721.  
**Raman effect**. See Spectra, Raman.  
**Rana**, embryo, archenteron collapse in, III, 727.  
**Rana pipiens**, development of, III, 866.  
intermedia in, III, 506.  
diploid hybridisation in, III, 507.  
eggs of, androgenetic development of, III, 81.  
effect of colchicine on cleavage of, III, 4.  
electric impedance of, III, 727.  
embryos, abnormal growths in, after delayed fertilisation, III, 187.  
hybrids between, and *R. sphenoccephala*, developmental rate of, III, 187.  
larvæ, gastrula ectoderm development in regenerating tissue of, III, 726.  
otic vesicle in, III, 567.  
temperature change and rate of development in, III, 727.  
**Rana sphenoccephala**, hybrids between, and *R. pipiens*, developmental rate of, III, 187.  
Rankinite, from Seawt Hill, Co. Antrim, I, 283.  
**Raoult's law**, for binary systems, I, 393.  
**Rare earths**. See Earths, rare.  
**Raspberry leaves**, extracts of, effect of, on uterus, III, 412.  
**Raspberry oil**, constituents of, II, 246.  
**Rats**, age and diet in relation to nephrosis and other diseases of, III, 320.  
ageing and growth of, gland weights and environment in relation to, III, 566.

**Rats**, albino, failure of cyclic mating behaviour in, III, 129.  
 growth curve of, in relation to diet, III, 759;  
 post-parturitional heat and ovulation time in, III, 523.  
 rusting in, nutrition in relation to, III, 155.  
 castrated, bone growth in, III, 391.  
 choline-deficient, biochemical defect in, III, 331.  
 developing, experiments on, III, 726.  
 developmental abnormalities and diseases in, III, 284.  
 Eastern cotton. See *Sigmodon hispidus hispidus*.  
 effect on, of androgens and oestrogens, III, 128.  
 fat of, rancidity development in, effect of diet on, III, 404.  
 female, body and organ weights of, effect of oestrous cycle on testosterone action on, III, 752.  
 effect on, of stilbæstrol, III, 233.  
 growth of, effect of pituitary and thyroid on, III, 309.  
 inhibition of, by 2-aminofluorene, III, 643.  
 hypophysectomised, implantation after mating in, treated with lactogenic hormone, III, 384.  
 infanticide in, III, 400.  
 leucocyte counts and longevity in, III, 89.  
 liver and body growth in, effect of stilbæstrol on, III, 387.  
 male, immature, response of, to androgens, III, 128.  
 mating behaviour of, effect of testosterone propionate on, III, 128.  
 normal and castrate, effect of stilbæstrol injections on, III, 387.  
 oestrogenised, for study of gonadotropic activity, III, 133.  
 oestrous cycles, pituitary, and sexual maturation of, effect of light on, III, 125.  
 parturition in, effect of human pregnancy serum on, III, 134.  
 pregnant, lactating, delayed implantation in, effects of theelin on, III, 386.  
 reproduction ability of, effect of age and rate of breeding on, III, 749.  
 survival of, at high altitudes, III, 375.  
 thyroidectomised at birth, effect of pituitary growth substance on development of, III, 123.  
 treatment of, with thymus extract, effect of, III, 307.  
 tumour-bearing, liver-catalase activity in, and effect of tumour extirpation, III, 250.  
 uterine distension and lactation in, III, 390.  
 water metabolism of, in relation to porphyrin secretions, III, 471.  
 well-nourished, time-weight relationship in, III, 403.  
 white, growth of, effect of fenugreek on, III, 468.  
 mitochondria in hepatic cells of, III, 189.  
 shock-resistance of, III, 946.  
 young, activity of, on vegetarian and omnivorous diets, III, 326.

**Rat-bite fever**, III, 348.

**Rate processes**, distribution laws for, I, 353.

**Rattlesnakes**, pigments of, pituitary regulation of, III, 599.

**Rauwolfia canescens**, alkaloids of, II, 182.

**Rauwolfscine**, II, 182.

**Rauwolfscinic acid**, and its salts and derivatives, II, 182.

**Rays**, biological effect of, on chick embryos, III, 931.  
 canal, photographic action of, I, 69.  
 cathode, of glow discharges, energy distribution in, I, 161.  
 radiation therapy with, III, 929.  
 cosmic, I, 36.  
 absorption of, by lead, I, 36.  
 at high-altitudes near magnetic equator, I, 287.  
 at 3500 metres, I, 312.  
 atmospheric, absorption of, in air and lead, I, 162.  
 diurnal variation of showers of, I, 163.  
 electric and magnetic effects of, I, 312.

**Rays**, cosmic, formation of penetrating particles by, I, 287.  
 hard and soft components of, I, 256.  
 latitude effect on, I, 36.  
 mesotrons in, I, 256.  
 neutral, I, 36.  
 non-ionising, penetrating, I, 129.  
 on 18th Sept 1941, I, 129.  
 origin of, Indian tests on theory of, I, 287.  
 penetrating, at sea level, I, 312.  
 formation of, by photons, I, 223.  
 penetrating secondary corpuscles from, I, 256.  
 penetrating showers of, I, 162.  
 photography of, I, 36.  
 primary, spectrum of, energy, I, 37.  
 protonic nature of, I, 36.  
 production of neutrons and protons by, at 14,125 feet, I, 287.  
 proportional counter for, I, 308.  
 recording of, I, 187.  
 showers of, ionising particles in, I, 36.  
 mesons in, I, 383.  
 particle distribution in, I, 312.  
 transition curve of, I, 350.  
 sidereal time variations of, I, 191.  
 soft, origin of, I, 224.  
 "star" tracks of, I, 224.  
 temperature effect with, I, 35.  
 theory of, I, 130, 224.  
 effect of, on lungs, III, 930.  
 on lymphatic flow in rats, III, 13.  
 on thorax, III, 930.  
 far infra-red, dispersion in, I, 196.  
 Grenz, treatment with, of leishmaniasis, III, 845.  
 harmful effects of, and protection therefrom, III, 416.  
 infra-red, measurement of, with superconductors, I, 377.  
 reflexion of, by compressed crystalline powders, I, 80.  
 transmission of, through fog, I, 80.  
 uses of, in analysis, I, 185.  
 in spot-testing, I, 280.  
 ionising, action of, on water, I, 373.  
 biological effects of, III, 553, 929.  
 140 kv. peak, measurements with, III, 639.  
 lesions produced by, in gastro-intestinal tract, III, 845, 850.  
 measurement of, in medicine, III, 774.  
 positive, spectrum of. See under Spectra.  
 resonance, quenching and depolarisation of, by collisions with molecules of foreign gases, I, 257.  
 theory of, finite self-energies in, I, 37.  
 treatment with, Chaoul, III, 486.  
 concentration method of, III, 714.  
 cytologic effects of, III, 250.  
 of cancer, III, 486.  
 of haemangioma of vertebra, III, 699.  
 ultra-violet. See Light, ultra-violet.  
 visible, effect of, on vegetative nervous system, III, 219.

**β-Rays**, absorption coefficient of, I, 32.  
 from radium-E, mean energy of, I, 31.  
 spectra of. See under Spectra.

**γ-Rays**, dosage measurement of, III, 639.  
 dosage and energy absorption with, III, 639.  
 effect of, on cells, III, 553.  
 emission of, during neutron capture, I, 32.  
 from aircraft instruments, III, 932.  
 from bombardment of phosphorus by protons, I, 33.  
 from magnesium bombarded by polonium α-particles, I, 33.  
 from radium, photo-disintegration of deuteron by, I, 33.  
 Klein-Nishina absorption of, I, 382.  
 measurement of, in roentgens, III, 932.  
 treatment with, measurement of ionisation currents in, III, 487.

**H-Rays**, hard, I, 32.

**X-Rays**, 200- and 400-kv, III, 933.  
 atrophy of germinal epithelium of rabbits' testis induced by, III, 391.  
 back-reflexion pictures of, I, 156.  
 bactericidal action of, III, 262.

**X-Rays**, burns from, treatment of, with *Aloe vera* leaves, III, 263.  
 contact, dosage of, for rat sarcoma, III, 931.  
 data of, for crystal analysis, I, 389.  
 densitometer for use with, III, 932.  
 depth-dosage calculation for, III, 932.  
 diagnosis by, in photographs and radiographs, III, 487.  
 diffraction of, by liquid oxygen, I, 354.  
 diffraction patterns of, cassette for, I, 212.  
 diffraction tubes for, grid-controlled, I, 281.  
 diffuse, reflexion of, and quantum theory, I, 229.  
 by crystals, I, 135.  
 dosage-effect curve for, III, 932.  
 dosage with, III, 714.  
 causing erythema, III, 339.  
 for erythema, III, 714.  
 in relation to lymphoid cell migration, III, 931.  
 isodose charts for, III, 714.  
 measured with goldfish, III, 487.  
 technique for, III, 339.  
 dosage and energy absorption with, III, 639.  
 dosimeter for, I, 411.  
 effect of, direct and indirect, on organs of adrenalectomised and normal rats, III, 930.  
 on adrenalone action of blood-sugar in rabbits, III, 745.  
 on brain, III, 930.  
 on cells, III, 364, 487.  
 on central nervous system of goldfish in water, III, 930.  
 on ciliary and muscular movements, III, 487.  
 on colloids, III, 58.  
 on flow in cutaneous lymphatics, in man, III, 374.  
 on  $p_H$  of water, I, 209.  
 on hyperglycæmic action of phenylethanolamine in rabbits, III, 708.  
 on hyperglycæmic action of tyramine in rabbits, III, 708.  
 on inflammation, III, 929.  
 on lymphatic transport, III, 930.  
 on peripheral nerve in rats, III, 930.  
 on rats, III, 486.  
 on sarcoma growth factors, III, 758.  
 on skin, III, 638, 931.  
 on skin wounds, III, 931.  
 on tumour enzymes, III, 465.  
 on water, I, 373.  
 energy absorption from beams of, I, 161.  
 films, sensitometry of, III, 933.  
 fluorescent screens for, III, 554.  
 generator for, III, 933.  
 voltage control of, III, 714.  
 Grenz, treatment with, of skin diseases, III, 339.  
 in industry and science, I, 318.  
 intensities of, from films, I, 45.  
 intensity data for, I, 354.  
 ionisation chambers for, I, 117.  
 irradiation with, survival after, in mice, III, 773.  
 K $\alpha$ , from copper, scattering of, by zinc crystals, I, 389.  
 low-absorption, measurement of, III, 932.  
 measurement of, calculator for, III, 57.  
 photo-electrically, I, 280.  
 million-volt, dosage with, III, 932.  
 monochromatic, diffraction of, by crystals, I, 135.  
 monochromator for, I, 74.  
 National Bureau of Standards laboratory for, III, 56.  
 photographs of. See under Photographs.  
 powder cameras for, I, 27.  
 production and use of, I, 1.  
 protection from, in radiology, III, 714.  
 reflexion of, by crystals, I, 134.  
 quantum theory of, I, 85.  
 with change of frequency, I, 389.  
 reflexion and scattering of, with change of frequency, I, 197.  
 retarding of electrons by, I, 254.

- X-Rays**, scattering of, by crystals, I, 135, 389.  
by potassium bromide and chloride crystals, I, 229.  
effect of thermal vibrations on, I, 389.  
secondary electrons from, I, 311.  
soft, production and measurement of, III, 932.  
spectra of. See under Spectra.  
supervoltage, physical characteristics of, III, 933.  
surface distribution of, from million-volt generator, III, 339.  
transmission of, I, 311.  
treatment with, III, 338, 339, 486, 929.  
dosage measurement in, III, 774.  
evaluation of dosimeters in, III, 57.  
for closure of epiphyses, III, 281.  
of angiomatosis retinae, III, 681.  
of bone tumours, III, 616.  
of cancer, III, 486.  
of diabetes, III, 384.  
of Graves' disease, sarcoma of neck after, III, 904.  
of inflammation, III, 56, 638.  
of leukaemia, III, 11.  
of pneumonia, III, 15, 930.  
of postoperative parotitis, III, 929.  
of purpura, III, 11.  
of sinusitis, III, 930.  
tubes for, field emission, I, 157.  
focal spot size determination of, III, 57.  
for diffraction analysis, I, 377.  
millimeters in circuits of, III, 339.  
rating charts for, III, 714.  
table for localisation of foreign bodies with, III, 714.  
voltage measurements of, III, 714, 932.  
use of, in medicine, III, 56.  
weak, detection of, with Geiger-Müller counter, secondary electron multiplier, and photographic films, I, 158.  
weakening of, by lithium beryllium borate glass, I, 198.
- Raynaud's disease**, capillary studies in, III, 98.  
lungs in, effect of cold on, III, 375.  
treatment of, with histamine iontophoresis, III, 928.  
with vitamin-B, III, 373.  
with spontaneous cold haemagglutination, III, 296.
- Reactions**, activation energies of, I, 66, 103.  
aromatic, side-chain, polar effects of substituents in, II, 99.  
base-exchange, ionic competition in, I, 297.  
catalytic. See Catalytic reactions.  
common ion effect in, demonstration of, I, 215.  
monocyclic, with three centres, I, 60.  
drop, interference in, I, 276.  
effect of negative groups on, I, 24.  
effect of water on, I, 207.  
elimination, II, 131.  
mechanism and kinetics of, I, 148.  
explosive. See Explosions.  
gaseous. See Gas reactions.  
genesis and development of, I, 24.  
heterogeneous, diffusion and kinetics of, I, 105.  
rate of, at phase boundaries of solids, I, 301.  
in dilute aqueous solution, I, 248.  
in electric discharges, I, 273, 303.  
in glow discharge, I, 208.  
involving excited electronic states, I, 67.  
bimolecular, kinetics of, in solution, I, 103.  
molecular structure changes during, II, 286.  
non-isothermal, graphical calculation of, I, 149.  
of free radicals, I, 147.  
of solids, I, 152, 160, 274, 275.  
of solids at high temperatures, I, 211, 274.  
organic, calorimetry of, I, 299.  
heats of, I, 399; III, 774.  
kinetics of, in liquid systems, II, 185.  
photochemical. See Photochemical reactions.  
thermal, chemical equilibria of, I, 22.  
topochemical, kinetics of, I, 269.  
velocity of. See Velocity of reaction.
- Reactivity**, effect of negative groups on, I, 24.  
structure and, II, 220.
- Reagents**, analytical, organic, I, 73.  
specifications for, I, 71.  
for cations, I, 410.  
qualitative, for cations, I, 376.
- Recklinghausen's disease**, III, 115.  
and diabetes, III, 624.  
in otology, III, 227.  
in pregnancy, III, 110.
- Reclus' disease**, cystic, normal ovarian function in, III, 311.
- Recruits**, glycosuria in, III, 321.
- Rectum**, atresia of, and anus, III, 243.  
effect of morphine on, III, 167.  
injury to, due to improperly administered enemas, III, 144.  
mucosa of, removed for cancer; precancerous areas in, III, 466.  
polyps of, in infants and children, III, 152.  
stricture of, due to lymphogranuloma venereum, treatment of, with sodium sulphanilysulphanilate, III, 839.
- Red nucleus**. See under Brain.
- Redlich-Fischer plaques**. See Brain, senile plaques in.
- Reductase**, cell-free solutions of, III, 58.  
cytochrome, III, 640.  
in nitrogen-fixing bacteria, III, 62.
- Reduction**, electrolytic, effect of wetting agents on, I, 175.  
of organic compounds, II, 73.  
vessel for, I, 371.  
Jones apparatus for, I, 119.
- Reductones**, II, 3.
- Reflexes**, abdominal, of peripheral origin, inversion of, III, 882.  
conditioned, inhibition of, and their re-establishment by convulsion therapy, III, 884.  
dorsal root, effect of painful lesions on, in dogs, III, 445.  
flexor, crossed inhibition of, in spinal mammal, III, 446.  
grasp, hypoglycaemic shock and, III, 586.  
in insulin coma, changes in, III, 302.  
in spinal extensors, III, 445.  
intestinal, inhibitory, localisation of, III, 881.  
lingual maxillary, effect on, of circulatory changes, III, 446.  
Pavlov, in mental diseases, III, 674.  
pyramidal muscle, III, 738.  
spinal, effect of carbon dioxide and oxygen on, in *Leptodactylus ocellatus*, III, 738.  
effect of temperature on, III, 881.  
tail, of lizards, III, 881.  
vagus-postpituitary, III, 300.
- Refraction**, conical, I, 231.  
double, curves of, I, 393.  
media for, relativity in, I, 38.  
molecular, nomograph for, I, 165.  
nomographs for critical temperature and, I, 289.
- Refractive index**, determination of, from Brewsterian angle, I, 84.  
of gases, at radio frequencies, I, 167.  
of solids, at and above m.p., I, 341.  
surface tension and, I, 134.
- Refractivity**, molecular, variation of, with b.p., I, 228.
- Refractometers**, I, 74, 116.  
Abbe-type, I, 341.
- Relapsing fever**. See under Fever.
- Renin**, action of, on coronary vessels, III, 841.  
on uric acid metabolism of pregnant and non-pregnant dog, III, 99.  
bioassay of, III, 14.  
experiments with, III, 205.  
formation site of, in kidney, III, 580.  
in pregnancy, III, 514.  
preparation and properties of, III, 554.  
specificity of, III, 205.
- Rennet**, coagulation of, III, 419.
- Rennet brine**, film-forming yeasts in, III, 555.
- Reproduction**, effect on, of age and presence of ovaries, in testosterone-injected rats, III, 240.  
of biotin in fowls, III, 911.  
of vitamin-B<sub>12</sub> and riboflavin deficiency in rats, III, 539.
- Reproduction**, efficiency in, of cattle, III, 523.  
on purified diet, III, 892.  
sex hormones and vitamins in, III, 453.
- Reproductive system**, tumours of, relation of sex hormones to, III, 824.
- Reptiles**, holder for, III, 502.
- Resacetophenones**, substituted, condensation of, with ethyl acetoacetate and aluminium chloride, II, 235.
- Resins**, natural, II, 276.  
elemi Manila, acids of, II, 418.
- Resins**, synthetic, adsorptive properties of, I, 171.  
aniline-formaldehyde, temperature-viscosity relations for cresol solutions of, I, 237.  
viscosity of solutions of, I, 143.  
as substitute for Canada balsam, III, 287.  
base-exchange, adsorption isotherms of, I, 141.  
dermatitis caused by fabric finishes of, III, 638.  
formaldehyde-phenol, II, 255, 310, 314, 317, 374.  
hardening of, II, 358.  
furan, II, 373.  
Novolac, volatility, vapour pressure, and diffusion coefficients in mixtures of acetophenone and, I, 263.
- Resorcinol**, adsorption of, by sugar charcoal, I, 235.  
alkyl ethers, II, 193.  
condensation of, with acyclic acids, II, 402.  
with succinic anhydride, II, 261.  
derivatives, reaction of, with phthalic and succinic anhydrides, II, 198.
- Resorcinols**, vicinal-substituted, II, 308.
- Resorcinol-succinein**, II, 119.
- $\beta$ -Resorcyllaldehyde**, derivatives, optical properties of, II, 361.  
nuclear methylation of, II, 98.
- Respiration**, capacity for, during first decade of life, III, 442.  
changes in, due to open pneumothorax, III, 735.  
commencement of, in Caesarean section infants, III, 671.  
effect on, of barbiturate anaesthesia, III, 803.  
of smoking, III, 484.  
gases for, analysis of, III, 297.  
gasping mechanism in, III, 15.  
movements of, III, 206.  
of premature infants, III, 879.  
"oxygen trough," III, 736.  
reflex changes in, induced by distension of small intestine, III, 670.  
tambour for, III, 581.  
temperature characteristics for, in newts under anaesthesia, III, 914.  
vital capacity in, in aged, III, 582.  
volume and equivalent of, in children, III, 206.
- Respirator**, box, diaphragmatic paralysis treated in, III, 582.
- Respiratory centre**, activity of, reflex regulation of, rôle of cardio-aortic and carotid sinus chemoreceptors in, III, 206.  
effect on, of curare, III, 442.  
excitability of, to oxygen and carbon dioxide pressures, III, 297.
- Respiratory metabolism**, effect on, of delvinal sodium in monkeys, III, 550.  
in fructosuria, III, 541.  
in infancy and childhood, III, 158.
- Respiratory muscles**. See under Muscles.
- Respiratory system**, anatomy and physiology of, in foetus and newborn infant, III, 206.
- Respiratory tract**, fluid of, excretion of, III, 582.  
output measurement of, for expectorant action study, III, 50.  
fowl pox viruses in, III, 353.  
mucosography of, III, 879.  
upper, infections of, chemotherapy of, III, 626.  
water content of, seasonal variation of, in birds and mammals, III, 101.
- Respirometer**, micro-, III, 502.  
capillary, III, 15.  
volumetric, for aquatic organisms, III, 834.
- Resuscitation**, history of, and oxygen therapy, III, 515.
- Reticulocytosis** in anaemia, III, 366.
- Reticulo-endothelial system**, effect of light on, III, 340.

- Reticulo-endotheliosis**, aleukæmic, Auer's bodies in, III, 872.
- Retina**. See under Eyes.
- Retinitis**, central, recovery from, III, 25.
- Retinitis pigmentosa**, with macular dystrophy, III, 24.  
with widespread gliosis, III, 681.
- Retinoblastoma**, III, 590.  
familial, III, 590.  
histogenesis of, III, 681.  
treatment of, surgically and with irradiation, III, 590.
- Retronecic acid**, II, 66.
- Retronecine**, action of, III, 771.
- Retrorsine**, II, 66.
- Rhachischisis**, anterior and posterior, III, 281.
- L-Rhamnose tetrapropionate**, II, 79.
- Rhamnus japonica**, bark, constituents of, II, 47.
- Rhenium**, catalytic properties of, I, 208.  
reaction of, and its thiocyanate, with toluene-3:4-dithiol, I, 181.
- Rhenium compounds**, polarographic study of, I, 303.
- Rhenium trichloride**, reaction of, with magnesium methyl iodide, II, 41.  
disilicide, crystal structure of, I, 390.
- Perrhenates**, detection of, I, 307.  
reduction of, at dropping mercury electrode, I, 303.
- Rhenium detection and determination**:—  
detection of, I, 307.  
determination of, colorimetrically, I, 340.
- Rheumatic fever**, cardiac lesions in, III, 734.  
congestive failure in children with, III, 203.  
diagnosis of, formol-gel test in, III, 497.  
erythrocyte sedimentation rate in, effect of acetylsalicylic on, III, 367.
- Rheumatism**, acute, sulphonamides in, III, 707.  
palindromic, III, 821.  
treatment of, with sulphanilamide in children, III, 707, 838.
- Rheumatoid arthritis**. See under Arthritis.
- Rhinitis**, allergic, treatment of, with *Bacillus coli* metabolin, III, 651.  
due to kamala powder, III, 652.  
vasomotor, III, 15.  
treatment of, with allergens, III, 561.
- Rhizobium**, growth of, effect of temperature on, III, 345.  
synthesis of co-enzyme R by, III, 345.
- Rhizobium japonicum**, growth of, III, 421.
- Rhizobium meliloti**, nitrogen fixation by, in relation to its source, III, 358.
- Rhizobium trifolii**, nitrogen fixation by, III, 654.
- Rhizoctonia solani**, growth of, and parasitic action, III, 644.
- Rhizopus suinus**, growth substance requirement and synthesis by, III, 937.
- Rhodanine-1':5'-dimethyloxindole**, II, 423.
- Rhodanine-2':3'-methyloxindoles**, II, 423.
- Rhodanine-oxindoles**, cinchonic acid derivatives from, II, 423.
- Rhodia japonica**, leaves of, glucoside from. See Rhodeatoxin.
- Rhodeatoxin**, chemistry and pharmacology of, III, 769.
- Rhodium**, electrical conductivity of, I, 199.  
long-lived activity of, I, 79.  
resonance absorption of neutrons in, I, 286.  
spectrum of, arc, I, 77.
- Rhodium compounds**, I, 337.
- Rhodizonic acid**, salts, preparation of, from inositol, II, 176.
- Rhododendron flavum**, leaves, glucoside from, II, 190.
- Rhodoporphyrin**, methyl ester, 6-carboxylpiperidide, II, 383.
- Rhodoporphyrin**, hydroxy-, benzoyl derivative, dimethyl ester, II, 289.  
nitro-, dimethyl ester, and its copper salt, II, 152.
- Rhodopterin**, II, 238.
- Rhodotorula rubra**, symbiosis of, with *Mucor ramannianus*, III, 849.
- Rhynchotragus kirkii nyikæ**, placentation of, III, 187.
- Ribs**, costochondral junction of, effect of hormone injections on, in rats, III, 565.  
radiation osteitis of, III, 932.
- Riboflavin**, absorption of, in anemia, III, 909.  
as food factor in food utilisation economy, III, 831.  
content of, in liver, III, 762.  
in milk, III, 328.  
deficiency of, antibody response in, III, 831.  
effect of, on reproduction in rats, III, 539.  
endemic, in infants and children, III, 155.  
excretion test as measure of, in man, III, 620.  
in dogs, III, 406.  
in pigs, III, 328.  
metabolism and food utilisation in chicks with, III, 471.  
pathology of, III, 831.  
succinic-oxidase in rats with, III, 341.  
determination of, III, 831.  
fluorophotometrically, III, 254.  
in biological fluids, fluorometrically, III, 254.  
in cereals, microbiologically, III, 701.  
microbiologically, III, 155, 910.  
growth stimulants in, III, 910.  
rat growth method for, III, 831.  
effect of light on solutions of, III, 909.  
metabolism of. See under Metabolism.  
protection with, and casein, against liver cancer, III, 150.  
relation of, to cataract formation in rats, III, 518.  
treatment with, of corneal disease, III, 678.  
of keratitis, III, 22.  
See also Vitamin-B<sub>2</sub>.
- Ribonuclease**, III, 419.  
crystalline, spectrum of, absorption, ultraviolet, III, 58.
- Ribonucleic acid**, enzymic hydrolysis of, III, 777.
- δ-Ribose**, III, 248.
- Rice**, ripening of, amylase action in, III, 265.  
varieties of, mineral and protein constituents of, nutritive value of, III, 618.
- Rice plants**, fermentation, growth, and respiration of, effect of oxygen on, III, 652.  
physiology of, III, 860.
- Rice starch**. See under Starch.
- Ricinus**, lipase of, hydrolysis of oil residues by, III, 418.
- Rickets**, cure and prevention of, by sunlight in Arizona, III, 833.  
in black races, III, 763.  
late, resembling Fanconi syndrome, III, 330.  
X-ray diffraction pattern alterations of rat tibia in, III, 865.
- Rickettsia**, ætiological relationship of, to thromboangiitis, III, 878.
- Rickettsiosis**, South African, III, 179.
- Rigidity**, decerebrate, in infant, III, 738.
- Rings**, five-membered, thermal decomposition of, II, 252.
- Ring systems**, condensed, synthesis of, II, 142, 167.
- Ringworm**, fungi of, effect on, of copper salts and organo-mercurials, III, 481.
- Ritter's disease**, treatment of, with sulphapyridine, III, 919.
- "Rivanol"**, base of. See 7-Ethoxyacridine, 2:5-diamino.
- Rivers**, Tennessee Valley, solution cavities below, I, 216.
- Robustic acid**, and its derivatives, II, 211.
- Rocks**, age of, helium index and, I, 76.  
helium method for estimating, I, 344.  
air flow through, I, 76.  
Archean, of Thunder Lake, Ontario, I, 217.  
Audubon-Albion stock, Boulder Co., Colorado, I, 217.  
Buxa Duars, geology of, I, 218.  
Californian intrusive, radioactivity and petrology of, I, 216.  
Canadian, alteration of, by hydrothermal solutions, I, 160.  
Central Montana, I, 160.  
compression creep of, I, 347.  
crystalline, grain boundaries in, I, 217.  
Deccan Trap, age of, from "lead-ratio," I, 160.
- Rocks**, diabase, Palisade, New Jersey, I, 210.  
sills of, at Duluth, Minnesota, I, 217.  
dyke, Front Range, Colorado, minor elements in, I, 345.  
Ep-Archean and Ep-Algonkian erosion, of Grand Canyon, I, 216.  
flow of, I, 188.  
granitic, Japanese, I, 348.  
hardness of, to scratching, effect on, of adsorption, I, 344.  
helium and radioactivity in, I, 121, 216.  
igneous, American, rare metallic constituents of, I, 380.  
determination in, of radium, I, 113.  
origin and control of, I, 347.  
Stanner-Hanter district, Radnorshire, I, 220.  
Terlingua-Solitario region, Texas, I, 217.  
igneous-appearing, formation of, from coaly sediments, I, 252.  
intrusive, Mount Prospect, N.W. Connecticut, I, 347.  
Okanogan valley, I, 219.  
Lake Superior Pre-Cambrian, I, 218.  
molten, density of, I, 123.  
Philippine Archipelago, I, 219.  
retrograde metamorphism of, I, 217.  
silicate, determination in, of lead, I, 307.  
volcanic, San Augustin plains, New Mexico, I, 219.  
See also Minerals and Ores.
- Rock-salt**, crystal dynamics of, I, 319.  
crystal structure of, I, 86.  
diffraction of X-rays from, I, 46.  
elastic moduli of, near m.p., I, 166.  
reflexion and scattering of X-rays in, I, 86.
- Röntgenography**, exposure meter for, III, 933.
- Roots**, formation of, effect of wounding and wound hormones on, III, 74.  
leguminous, infection of, with *Rhizobium*, III, 74.
- Rorschach symbols**, table of, in psychiatry, III, 884.
- Rosa**, chromosome number and vitamin-C in, III, 949.
- Rose hips**, vitamin-C in, III, 912.
- Rosmarinescine**, II, 66.
- Rossi curve**, second maximum in, I, 224.
- Rotation**, optical, constitution and, II, 325, 417.  
of organic compounds, I, 228.
- Rotenone**, m.p. of, II, 111.  
photochemical decomposition of, I, 109.  
treatment with, of scabies, III, 844.
- Rotifer vulgaris**, killing of, by tetanus toxin, III, 67.
- Royal jelly**. See under Bees.
- Royte**, from Jharia coal field, I, 123.
- Rubber**, II, 161, 353.  
absorption by, of water, in relation to swelling, I, 326.  
autooxidation in, II, 341.  
compression creep of, I, 347.  
crystal structure of, I, 260.  
elasticity of, and molecular structure, I, 260.  
interaction of, with liquids, I, 204.  
mol. wts. of, and related materials, I, 173.  
molecules, stereochemistry of, I, 362.  
optical properties of, I, 133.  
reaction of, with organic liquids, I, 362.  
statistical thermodynamics of, I, 204.  
structure of, micella theory of, I, 173.  
X-ray, I, 362.  
structure and viscosity of, in relation to permeability, I, 362.  
substitutes, molecular movements in, I, 260.  
swelling of, in organic liquids, I, 362.  
thermodynamics of, I, 326.  
thermodynamics of mixtures of benzene and, I, 204.
- Rubber balloons**. See under Balloons.
- Rubber gloves**, sterilisation of, III, 779.
- Rubber stoppers**, economiser for, I, 378.
- Rubber trees**, white root rot of. See *Fomes lignosus*.
- Rubella**, prophylactic use of serum against, III, 938.
- Rubidium**, spectrum of,  $\beta$ -ray, I, 383.

- Rubidium hexafluogermanate**, crystal structure of, I, 290.  
sulphate, activity coefficient of, in aqueous solutions, I, 239.
- Ruby**, fluorescence, absorption, and scattering of light in, I, 195.  
polarisation of luminescence of, I, 42.
- Rumen**, chemical changes of ingesta of, with and without urea, III, 392.  
gases in, in ruminants, III, 818.
- Ruminants**, vitamin-A deficiencies in, III, 538.
- Ruthenium organic compounds** :—  
Ruthenium dipyriddy, use of, as oxidimetric indicator, I, 183.
- Ruthenium determination** :—  
determination of, spectrophotometrically, I, 377.
- Rye germ**, chemistry of, III, 181.
- Ryegrass**. See *Lolium perenne*.
- S.
- Sabellaria vulgaris**, annelid development in, III, 4.
- Sacchiuste**. See *Nolina texana*.
- Saccharic acids**, identification of, II, 248.
- Saccharides**, uricosuric effect of, III, 636.
- Saccharin**, hydrazone, II, 335.  
reaction of, with ammonia, ammonium carbonate, carbamide, and dicarbamhydrazide, II, 335.  
with hydrazine, II, 335.  
with semicarbazide, II, 335.  
semicarbazone, and its derivatives, II, 335.
- Saccharinic acid**, carbamide salt, II, 335.
- d-Saccharidibenzimidazole**, and its derivatives, II, 248.
- Saccharomyces cerevisiae**. See Yeast.
- Saccharomyces galactosus**, reproduction of, effect of bios V and VII on, III, 470.
- Saccharomyces hanseniaspora valbyensis**, reproduction of, effect of bios V and VII on, III, 470.
- Saccharomyces saké**, as source of vitamin-L<sub>2</sub>, III, 765.
- Saffron**, use of, in biological stains, III, 868.
- Sage brush**, American. See *Artemisia tridentata*.
- Sagvandite**, Madagascari, I, 252.
- St. John's wort**. See *Hypericum perforatum*.
- isoSakuranetin acetates**, II, 149.
- Salamandra**, heart conducting system of, III, 94.  
larvæ, haploidy in, III, 507, 659.  
marbled, sex development moderation in, sex hormone administration, III, 749.
- Salazopyrin**, treatment with, of colitis, III, 920.
- Salasite**, structure of, and olivine, I, 251.
- Salicylaldehyde**, adsorption of alcohols at interface of water and, I, 202.  
complexes of, with ethylenedi-imine, spectra of, absorption, I, 352.  
nickel salt, magnetic susceptibility of, I, 137.
- Salicylaldehyde**, 4-nitro-, II, 260.
- Salicylaldoxime**, determination of lead with, I, 114.  
quantitative separation of metals with, I, 278.
- Salicylazosulphapyridine**. See Salazopyrin.
- Salicylic acid**, antiseptic action of, III, 648.  
compounds of, with *m*-phenylenediamine and benzoic acid, I, 52.  
methyl ester, poisoning by. See under Poisoning.
- partition of, between benzene and water, I, 395.
- salts, absorption rate of, from stomach and intestines, III, 261.  
reaction of, with methæmoglobin, III, 774.  
sodium salt, effect of, on fundus gland secretion, III, 316.  
treatment with, of rheumatic pericarditis with effusion, III, 710.
- Salicylideneaminoacetic acid**, copper ethyl ester, II, 313.
- 3-Salicylideneaminoquinaldine**, II, 31.
- Saliva**, antibacterial factors of, in man, III, 938.  
determination in, of nitrogen, III, 952.  
fluorine in, in man, III, 141.
- Saliva**, hormone in, chorionic gonadotropic, test for, in pregnancy, III, 455.  
iodine content of, in New York City area, III, 322.  
phosphate equilibrium between, and plasma, III, 455.  
reducing properties of, III, 462.  
secretion of, synergistic action of adrenaline and pilocarpine on, III, 481.  
submaxillary, calcium of, origin and mode of secretion of, III, 895.  
obtained by chorda and sympathetic stimulation, physico-chemical constants of, III, 895.
- Salivary gland**, tumours of, histopathological prognosis of, III, 616.
- Salmo salar**, hepatogenesis of, III, 506.
- Salmon**, Atlantic. See *Salmo salar*.  
blood of, during migration, III, 736.  
pink. See *Oncorhynchus gorbuscha*.  
poisoning by. See under Poisoning.  
sockeye. See *Oncorhynchus nerka*.
- Salmonella**, infections with, effect on, of sulph-anilylguanidine, III, 706.  
reactions with anti-O-sera from, III, 272.
- Salmonella illinois**, III, 495.
- Salmonella poona**, H antigens of, effect of bacteriophages on, III, 495.
- Salmonella typhi**, vi antigen of, stability of, III, 495.
- Salmonella typhi murium**, diarrhoeal disease due to, III, 352.  
vaccine dosage against, III, 354.
- Salsify**, growth of tissue cultures of, III, 562.
- Salt**. See Rock salt and Sodium chloride.
- Salts**, determination in, of water of hydration, I, 112.  
double, basic, I, 274.  
exchange and transfer equilibria of acids, bases, and, in deuterium oxide-water mixtures, I, 144.  
hydrated, dehydration of, by boiling non-aqueous liquids, I, 180.  
mineral, treatment with, of dental caries, III, 537.  
mixed, binary, thermal diffusion of solutions of, I, 52.  
paraffin-chain, adsorption by solutions of, I, 171.  
reduction of, by metals in liquid ammonia solution, I, 153, 306.  
solubility of, I, 19, 202.
- Salvarsan**, colloid and crystalloid fractions of, distribution and retention of, III, 634.  
old, hypersensitiveness of skin to, in guinea-pigs, III, 770.  
sensitisation of guinea-pigs to, vitamins in relation to, III, 925.  
physico-chemical properties of, III, 53.  
thrombocytopenic purpura after, III, 770.
- Salvelinus fontinalis**, activity of, effect of temperature on, III, 611.
- Salvia carnosa**, III, 563.  
constituents of, II, 242.
- Samarium**, spectrum of, Raman, I, 41.
- Samarium separation** :—  
separation of, from gadolinium and neodymium, I, 373.
- Samia cecropia**, pupæ of, electrical potential changes of, prior to emergence, III, 900.
- Sands**, black, and ruby, analysis of, I, 341.  
California, I, 348.  
gypsum, New Mexico, origin of, I, 347.  
white, Martinez, California, I, 347.
- Sandflies**. See *Phlebotomus papatasi*.
- Sandmeyer reaction**, II, 52, 222, 254.
- Sandstone**, titaniferous, Buena Vista, Virginia, I, 347.
- Sanidine**, crystalline, Utah, I, 347.
- Sansevieria zeylanica**, propagation from cuttings of, III, 861.
- Sapogenins**, II, 148, 177, 230, 232, 265, 372, 414, 418; III, 257, 862, 915.
- Saponins**, effect of, on chicken red cells, III, 570, 661.  
foam time of solutions of, I, 172.  
karyoclastic properties, of, III, 286.  
sterols and, II, 369.
- Sarcoendothelioma**. See Sarcomesothelioma.
- Sarcoma**, at sites of implanted bakelite discs in rats, III, 148.  
benzpyrene, nucleoprotein-phosphorus content of, in rats, III, 903.  
effect on, of dyes, III, 465.  
of ultra-short waves, in rabbits, III, 325.  
from human cancerogenic tissue extract, III, 248.  
from right ovarian teratoma complicated by left ovarian dermoid, III, 536.  
Fujinawa's, organotropy of quinine derivatives for tissues of rats with, III, 698.  
growth factors of, effect of X-rays on, III, 758.  
hæmorrhagic and pigmented, multiple idiopathic. See Kaposi's disease.  
induced, susceptibility to, effect of heredity on, in rats, III, 401.  
induction of, with wheat-germ oil preparation, III, 398.  
intraperitoneal inoculation of, effect of sex of mice on resistance to, III, 534.  
mouse, irradiated, growth of, effect of distilled water injections on, III, 931.  
neutralisation of agent causing, by rabbit antisera in fowls, III, 402.  
of bladder. See under Bladder.  
of cerebellum. See under Cerebellum.  
of ovary. See under Ovaries.  
production of, by cotton-seed oil injection in mice, III, 463.  
rat, X-ray dosage for, III, 931.  
retransplantation of, after X-irradiation in rabbits, III, 535.  
Rous, cancerisation of cells by, III, 697.  
cells, nuclear changes in, III, 150.  
cultures of, cellular composition of, III, 150.  
virus of, age susceptibility of ducks to, III, 697.  
skin, neck, after X-ray treatment of Graves' disease, III, 904.  
subcutaneous, production of, by azo-dyes, III, 696.  
thyroid function and calcium metabolism in rabbits with, III, 534.  
transmissible, genetic resistance to, in fowls, III, 401.  
transplantable, effect of sex on, in mice, III, 151, 401.  
vitamin-E in, III, 615.  
See also Cancer.
- Sarcoma 37**, growth of, effect of hybridisation on, in mice, III, 150.
- Sarcoma 180**, growth of, effect of body temperature on, in mice, III, 151.  
viability of, effect of radio-phosphorus on, in mice, III, 534.
- Sarcomesothelioma**, synovial, III, 826.
- Sarcoptes scabiei var. hominis**, III, 357.
- Sarcosine oxidase**. See under Oxidase.
- Sargassum thunbergi**, pharmacology of, III, 772.
- Sarsapogenin**, structure of, II, 177.
- ψ-Sarsapogenin diacetate**, reaction of, with hydrogen peroxide, II, 232.
- epi-isoSarsapogenin**. See epiSmilagenin.
- Sarsapogenoic acid**, and its methyl ester, II, 232.
- Sauroxine**, and its methiodide, II, 336.
- Saururine**, and its derivatives, II, 336.
- Sawflies**, diapause among, III, 147.
- Scabies**, parasitology of, III, 357.  
transmission of, III, 357.  
treatment of, with benzyl benzoate, III, 411.  
with rotenone, III, 844.  
with sulphur soap, III, 411.
- Scalp**, congenital defect of, III, 789.
- Scandens cardatum**, dermatitis of eyelids due to, III, 784.
- Scandium**, spectrum of, β-ray, I, 312.
- Scandium determination** :—  
determination of, in silicate rocks, I, 154.
- Scapolite**, from Manchester, New Hampshire, I, 219.
- Scapula**, III, 565.  
human, variations in, III, 565.  
juvenile, III, 657.
- Scarlatina**. See Scarlet fever.

- Scarlet fever, III, 648.  
antitoxin of, sensitisation of monkeys to, III, 272.  
serum, and sulphanilamide in, III, 706.  
at Kingston Avenue Hospital, Brooklyn, New York, III, 348.  
epidemic of, milk-spread, III, 559.  
epidemiology of, III, 559.  
in relation to hæmolytic streptococci, III, 272.  
erythrocytic sedimentation rate and Weltmann reaction in, III, 192.  
immunisation against, III, 559, 719.  
plasma-amino-acid level in, III, 665.  
toxin of, III, 494.  
toxin-antitoxin flocculation reaction in, III, 942.  
trypanocidal serum titre in, III, 719.
- Scleratin, action of, III, 772.
- Scheelite, Agargaon, Nagpur, I, 344.
- Schiff's bases, aromatic, spectra of, I, 194.  
reaction of, with methyl iodide, II, 380.
- Schilder's disease, III, 675.
- Schizophrenia, anti-insulin effect of blood in, III, 686.  
ascorbic acid tolerance test and its application to, III, 472.  
blood-cholesterol and -fatty acids in, effect of vitamin-B on, III, 473.  
deteriorated and recovered cases of, psychoses and other mental abnormalities in families of, III, 884.  
Lehmann-Facijs cerebrospinal fluid test for, III, 220.  
optic nystagmus in, III, 883.  
red blood corpuscle-chloride values in, III, 884.  
sleep disturbances in, III, 302.  
treatment of, with cardiazol shock, electrocardiographs in, III, 675.  
with convulsions and shock, electrocardiography of, III, 13.  
with cytotoxic antireticular serum, III, 806.  
with insulin shock, III, 308.  
with metrazol, III, 379.  
with nitrogen inhalation, III, 884.  
with serum, III, 302.
- Schizophyllum commune*, methyl mercaptan formed by, III, 786.
- Schüller-Christian disease, III, 43.
- Sciatica, treatment of, with almond oil and procaine hydrochloride injection, III, 516.
- Scillaren-A, conversion of, into *epiallolithocholic acid*, II, 81.
- Scillaridin, theophyllinated, efficiency and toxicity of, in heart, III, 840.
- Scillaridin-A, structure of, II, 81.
- Scilliroside, and its derivatives, II, 218.  
structure of, II, 279.
- Scirpus grossus*, amylase from, III, 419, 777.
- Sclareol, oxidation of, with potassium permanganate, II, 324.
- Scleratin, II, 66.
- Scleroderma, diffuse, treatment of, with dihydro-tachysterol, III, 381.
- Scleroma, constitution and, III, 395.  
mesenchyme function in, III, 395.  
monocytosis as sign of, III, 395.  
treatment of, with antireticular cytotoxic serum, III, 395.
- Sclerosis, amyotrophic, lateral, III, 302.  
neurone lesion in, III, 378.  
pathology of, III, 218.  
complex, tuberous, III, 727.  
diffuse, histopathology of, III, 676.  
disseminated, familial formes frustes of, and anomalies of abdominal reflexes, III, 675.  
myelolytic substances in, III, 378.  
myogram in, III, 213.  
multiple, blood-pantothenic acid values in, III, 19.  
in Baltimore City, III, 378.  
in relation to diet, III, 211.  
lesions of, vascular pattern of, III, 676.  
of blood vessels, in rats on sulphaguanidine diet, III, 628.  
pseudo-, spastic, III, 17.  
in relation to pellagra, III, 211.  
vascular, intestinal, III, 580.
- Sclerotinia americana*, toxicity to, of gliotoxin, III, 938.
- Sclerotinia fructicola*, germination of, toxicity of copper to, III, 849.
- Scopolamine, effect of, on foetus, III, 549.  
premedication with, in cardiazol convulsions, III, 20.
- Scopulariopsis brevicaulis*, action of, on salts of aliphatic seleninic and selenonic acids, III, 937.
- Scorpii, CL, spectrum of, I, 254.  
HK, spectrum of, I, 254.
- Scratching, and molecular strength, I, 317.  
theory of, I, 317.
- Scurvy, adult, and vitamin-C metabolism, III, 472.  
biochemical changes during, III, 911.  
blood-ascorbic acid, -ascorbigen, and -hæmoglobin in, relation between, in guinea-pigs, III, 875.  
death in infants with, III, 622.  
development of, effect of vitamin-C on, III, 255.  
iodine content of thyroid in, III, 744.  
outbreak of, III, 472.  
prevention of, by meat, III, 473.
- Scyllitol, configuration of, II, 13, 364.
- Sea, plant growth in, III, 785.  
radioactivity of sediments in, I, 120.
- Sea urchins, antifertilizin of, III, 659.  
gamones of, III, 141.  
See also *Arbacia*.
- Sea water. See under Water.
- Seals, arterial blood pressure regulation in, during diving, III, 666.  
diving ability of, heart-rate in relation to, III, 577.  
metabolism and temperature of, during diving, III, 541.
- Seamanite, crystal structure of, I, 219.
- Sebachisphenylhydrazide, II, 215.
- 2,2'-N<sup>4</sup>N<sup>4</sup>'-Sebacdi(sulphanilamido)thiazole, II, 429.
- Secretin, III, 393.  
test for, III, 608.
- Secretinase, in blood serum, III, 317.
- Sedatives, "delvinal sodium," III, 925.  
effect of, on cardiazol convulsions, III, 110.
- Sediments, Grassy Lake, Villas Co., I, 379.  
Gulf of California, I, 344.
- Sedimentation, I, 348.
- Seeds, boron in, III, 654, 949.  
germination of, protein metabolism in, III, 276.  
toxicity of ammonia to, III, 948.  
mucilages of, II, 135.  
viability of, in relation to humidity and temperature of air, III, 858.
- Seizures. See Fits.
- Selachians. See under Fish.
- Selenanthren, molecules, folding of, I, 390.
- Selenium, allotropes, crystal structure of, I, 198.  
colloidal and liquid, X-ray structure of, I, 230.  
dehydrogenation with, II, 341.  
glassy, structure of, I, 334.  
radioactive, emission of, homopolar bond rupture in, I, 223.
- Selenium compounds, bacteriostatic action of, relation of chemical structure to, III, 476.  
excretion of, by rats on seleniferous wheat ration, III, 772.  
in urine, III, 145.
- Selenium hexafluoride, dielectric constant of, I, 165.  
dioxide, reaction of, with  $\beta$ -pinene, II, 178.  
Selenic acid, secondary ionisation and activity coefficients of, I, 298.
- Chromi-selenates, complex, formation of, I, 111.
- Selenium organic compounds, II, 430.  
Selenium cysteine, II, 394.
- Selenopheno-2'-3'-1:2-anthraquinone, and its derivatives, II, 113.
- Selenopheno-2'-3'-1:2-anthraquinone-5'-carboxylic acid, II, 113.
- Semen. See Seminal fluid.
- Semiactals, heat of formation of, I, 23.
- Semicarbazides,  $\delta$ -substituted, II, 88, 169.
- Semicarbazones, substituted, II, 42.
- Semi-conductors, derivations from Ohm's law in, I, 30.  
rôle of, in electro-physiology, I, 300.
- Seminal fluid, analysis of, electrophoretic, in man, III, 893.  
ascorbic acid and phosphatase concentration in, III, 315.  
choline-esterase, mono- and di-amine-oxidase in, III, 893.  
collection of, and artificial insemination in bovines, III, 314.  
findings in, and basal metabolic rates, III, 391.  
 $pH$  of, in bulls, III, 815.  
in bulls, III, 455, 606.  
plasma, proteins of, in man, III, 893.  
production of, effect of adrenaline on, in fowls, III, 685.  
volume of, effect of sex hormones on, in man, III, 601.
- Seminal vesicles, duplication of, in mice, III, 284.
- Semiquinone radicals, magnetic evidence on existence of, I, 14.
- Semnopithecus entellus*, brain of, external morphology of, III, 446.
- Senecio, South African, alkaloids from, II, 66.
- Senecionine, action of, III, 771.
- Senna. See *Cassia augustifolia*.
- Sense organs. See under Organs.
- Sepsis, staphylococcal, fulminating, treatment of, with staphylococcus antitoxin and sulphapyridine, III, 628.
- Sepsotincture, disinfectant action of, and of iodine tincture, III, 268.
- Septicæmia, meningococcal, treatment of, with sulphanilamides, III, 335.  
staphylococcal, treatment of, with antiserum type A, III, 941.  
with antitoxin, III, 719.  
with sulphamethylthiazole, III, 706.  
with sulphathiazole, III, 706, 768, 838.  
with sulphonamides, III, 544.  
tularemia, treatment of, with sulphonamides, III, 411.
- Serine, dietary, fate of, in rats, III, 835.  
effect of, on liver-lipins in rats, III, 755.  
formation from, of cysteine by rat liver tissue, III, 835.  
of glycine, II, 278.  
lability of, to alkalis, II, 211.
- L-Serine, preparation of, from protein hydrolysates, II, 189.
- Serology, effect of surface-tension depressants in, III, 368.
- Serum. See Blood-serum.
- Sesamin, derivatives, structure of, and their synergistic effect with pyrethrum insecticides, III, 636.
- Sesamum indicum*, tetraploids of, induced by colchicine, III, 654.
- Sesquiterpenes, II, 191, 266, 280, 286, 356, 370, 417.
- Sex, cycle of, start of, in rats, III, 311.  
eminence of, effect of esterified androgen on, in chicks, III, 752.  
identification of, in chicks, by down, shank, and beak colour, III, 385.  
precocity of, associated with hyperplastic abnormality of tuber cinereum, III, 882.
- Sex organs. See Genitals.
- Sexual periodicity, enteroceptive factors in, III, 232.
- Shakers, mechanical, III, 951.
- Shaking apparatus, laboratory, I, 118.
- Shale, Tasmanian, ash composition of, I, 348.
- Shale oil, carcinogenic and dermatitic activity of, from peritoneal cavities of injected mice, reduction of, III, 148.
- Sheep, fertility in, hormonal augmentation of, III, 813.  
fleece of, evolution of, III, 362.  
mineral metabolism of, III, 827.  
Western Australian, infectious entero-toxæmia in, III, 769.



- Shield, safety, I, 251.
- Shigella paradyserteria*, infections by, treatment of, with sulphonamides, in mice, III, 627.
- isolation of, from faeces, III, 940.
- Shock, III, 614.
- allergic, after Schultz-Charlton test, III, 274.
- diagnosis of, postmortem, III, 275.
- convulsive, treatment with, in psychoses, III, 379.
- due to heart failure, III, 578.
- electric. See Electric shock.
- experimental, effect on, of horse serum, serum-albumin, and -globulin, in dogs, III, 663.
- haemorrhage and, III, 663.
- haemorrhagic, standardisation of, III, 801.
- hypoglycaemic, grasp reflex in, III, 586.
- in man, applicability of experimental results to, III, 373.
- metabolic response after, III, 914.
- obstetric, treatment of, with blood transfusion, III, 869.
- peptone. See Peptone shock.
- pharmacological, treatment with, of mental disease, III, 379.
- physiology of, III, 373.
- pleural. See Pleural shock.
- postoperative, effect on, of deoxycorticosterone acetate, III, 888.
- prevention and treatment of, effect of heat and cold in, III, 11.
- propagation of, diffusion in, I, 201.
- renal humoral mechanism in, homeostatic rôle of, III, 898.
- secondary, bovine serum-albumin as blood substitute in, III, 437.
- experimental, physiological effects of high oxygen concentrations in, III, 206.
- surgical, prevention of, by deoxycorticosterone acetate, III, 121.
- preoperative deoxycorticosterone acetate in, III, 745.
- treatment of, with glucose-citrate plasma, III, 91.
- traumatic, III, 878.
- effect of, on blood-sugar of adrenalectomised rats treated with adrenal extract, III, 382.
- treatment of, cardiovascular changes in, III, 877.
- with pooled serum, III, 10.
- treatment with, of mental disorders, III, 379, 806.
- vascular and cellular dynamics of, III, 514.
- Shortite, I, 252.
- Siaresinic acid, II, 418.
- $\alpha$ - and  $\beta$ -Siaresinonic acids, methyl esters, II, 418.
- Siberia, names of peoples of, III, 189.
- Sickle cell disease. See under Anæmia.
- Side ache. See Stitch.
- Siderocytes in man, III, 288.
- Sigmodon hispidus hispidus*, susceptibility of, to typhus, III, 720.
- Silane, spectrum of, rotation-vibration, I, 385.
- Silane, tribromo-, and dibromodifluoro-, molecular structures of, I, 134.
- Silica. See Silicic dioxide.
- Silica gel, adsorption by, van der Waals, of chlorine, I, 170.
- of hydrogen bromide, chloride, and iodide, I, 171.
- sorption-desorption hysteresis in, I, 324.
- structure of, I, 266.
- surface area of, I, 171.
- Silicates. See under Silicon.
- Silicic acid. See under Silicic.
- Silicon, co-ordination of, in glass, I, 319.
- electron scattering in, and structure, I, 319.
- solubility of, in aluminium, I, 394.
- spectrum of, I, 125.
- thermal energy of, I, 226.
- Silicon alloys with aluminium and nickel, I, 323.
- Silicon tetrabromide, molecular structure of, I, 134.
- carbide, electrodes of, I, 65.
- tetrahydride. See Silane.
- monoxide, I, 210.
- crystal structure of, I, 11.
- Silicon dioxide, equilibrium of, with alumina and ferrous oxide, I, 329.
- with aluminium, calcium, and iron oxides, I, 330.
- with carbon dioxide, potassium oxide, and water, I, 174.
- from vermiculite, sorption by, of water vapour, I, 263.
- heat content of, I, 116.
- heat of coagulation of, I, 266.
- in lungs, III, 773.
- ingested, absorption and excretion of, III, 929.
- ionic adsorption in solutions of, I, 295.
- Liesegang precipitation of, I, 239.
- vitreous, structure of, I, 196.
- oxychlorides, and their ethyl esters, I, 152.
- Silicic acid, colloidal, gels, I, 57.
- sols, electrochemical properties of, I, 57, 265.
- stability of, I, 296.
- determination of, in silicates, I, 277.
- from feldspar, dehydration of, I, 185.
- synthesis of, and its application in analysis, I, 409.
- Silicates, crystal "gardens" of, I, 204.
- determination in, of beryllium, I, 72.
- of ferrous iron, I, 115.
- of iron, I, 72.
- determination of, by molybdenum-blue reaction, I, 112.
- devitrification and m.p. of, in relation to cation field strength, I, 234.
- rock, determination in, of lead, I, 307.
- of potassium, I, 277.
- Silicon organic compounds:—
- Silicon tetraphenyl, spectrum of, absorption, I, 314.
- Silicic acid, esters of, in pulmonary dusts, III, 845.
- See also Hexamethyldisilane.
- Silicosis, hazard of, in metal mixes, III, 485.
- in paint production, III, 55.
- in Stourbridge fireclay miners, III, 338.
- systemic distribution in, III, 713.
- Silk, cysteine from, after alkali treatment, II, 5.
- Silkworms, eggs. See under Eggs.
- Silver, activation of, by mixed metallic oxides, I, 333.
- at. wt. of, I, 78.
- contact angle of water against, I, 236.
- K-electron capture in, I, 383.
- gas layer on surface of, I, 54.
- genetic correlation of deposits of gold and, with cinnabar, I, 283.
- hydrocols, production of, by electrolysis, I, 56.
- isotopes, radioactive, exchange of, with silver chloride suspensions, I, 373.
- reductor, in analysis, I, 115.
- surfaces, contact angles between organic liquids and water on, I, 396.
- thermal expansion of, I, 167.
- Silver alloys, with aluminium, structure of, during hardness, I, 394.
- with aluminium and lead, I, 235.
- with antimony, arsenic, bismuth, and magnesium, ternary, I, 394.
- with gallium, I, 323.
- with magnesium, use of, as secondary-electron emitting electrodes, I, 342.
- with zinc, structure of, I, 18.
- Silver salts, adsorption of, by gels of silica and sesquioxides, I, 94.
- reduction of, by hydroxylamine, I, 401.
- Silver antimonite, I, 406.
- arsenate, X-ray structure of, I, 230.
- bromide, desensitisation of, I, 372.
- chloride, films, preparation of, I, 411.
- Liesegang precipitation of, 239.
- precipitation of, in relation to electrokinetic double layer, I, 398.
- solubility of, in hydrochloric acid, I, 366.
- chromate, precipitation of, effect of gelatin on, I, 60.
- in gelatin, I, 68.
- rate of nucleation of, in supersaturated solutions, I, 262.
- Silver iodide, sols, negative, electrophoretic mobility of, in electrolyte mixtures, I, 98.
- volume of coagulates of, I, 21.
- nitrate, activity and osmotic coefficients of, I, 62.
- diffusion of, in teeth, III, 462.
- equilibrium of, with dioxan and water, I, 145.
- oxide, colloidal, treatment with, of mastitis in cows, III, 546.
- permanganate, action of hydrogen sulphide on, I, 70.
- sulphide, reaction of, with cuprous chloride, I, 63.
- thiosulphate, complexes of, in aqueous solution, I, 334.
- Silver determination:—
- determination of, electrometrically, I, 113.
- spectro-dochromatically, I, 377.
- with 2-thio-5-keto-4-carbethoxy-1:3-dihydropyrimidine, I, 248.
- Silver-ammonia ions, stability and activity coefficients of, I, 62.
- Silver electrodes. See under Electrodes.
- Silver mirrors. See under Mirrors.
- Silver ores containing tin, Oruro, Bolivia, I, 346.
- Simmond's disease, associated with pernicious anæmia, adenoma in, III, 452.
- diagnosis of, III, 597.
- and anorexia nervosa, III, 809.
- with craniopharyngioma, III, 596.
- Sinine, anti-malarial drug, III, 480.
- Sinomenine, II, 158.
- Sinusitis, in turkeys, III, 856.
- paranasal. See under Kartagener's triad.
- treatment of, with X-rays, III, 930.
- Sirocco. See under Wind.
- Sitostane-3( $\beta$ ):6( $\beta$ )-diol, and its diacetate, II, 231.
- Sitostane-3:6-dione, II, 231.
- Sitostenone, and its 2:4-dinitrophenylhydrazones, II, 286.
- $\beta$ -Sitosterol, inhibiting effect of, on hepatic cancer production, III, 463.
- Situs inversus, right-side gastroscopic technique in, and in visualisation of "blind spots," III, 456.
- Situs inversus viscerum. See under Kartagener's triad.
- Skeleton, effect on, of hormones, in mice, guinea-pigs, and rats, III, 185.
- preparation of parts of, for analysis, III, 502.
- Skin, acid-base equilibrium and bacterial flora of, III, 269.
- autonomic drug test for, with electrophoresis, III, 928.
- bacterial flora of, effect of ointments and solutions on, III, 547.
- burns. See under Burns.
- capillaries of, goitre and, III, 306.
- permeability and inflammation in, of sensitised rabbits, III, 513.
- cleanser for, industrial, III, 55.
- colour of, effect of hormones on, in catfish, III, 229.
- dangers to, in airplane manufacture, III, 55.
- effect on, and underlying tissues, of cold, III, 373.
- of irradiation, III, 931.
- of mustard gas, III, 772.
- of neutrons, III, 931.
- of X-rays, III, 638.
- in young rats at low temperature, III, 931.
- of sex hormones, III, 128.
- e.m.f. of, effect of hydrogen peroxide on, in frogs, III, 611.
- grafts of, pigment studies in, III, 611.
- grafting of, III, 34.
- human, irritant action of soaps on, III, 547.
- self-disinfection of, and its appendages, III, 643.
- pH of, determination of, in man and animals, III, 821.
- infections of. See Skin diseases.
- intact, action of drugs on, III, 338.
- irritants of, industrial, III, 929.

**Skin**, irritation of, by adhesive plaster, reduction of, III, 713.  
 lymphatics of, linear flow rate in, effect of X-rays on, in man, III, 374.  
 melanin production in, histochemistry of, III, 476.  
 melanophores of. See under Melanophores.  
 metabolic processes of, III, 475.  
 oxidation-reduction potential of, III, 183.  
 pigment of, influence of, on effect of ultra-violet rays, III, 475.  
 pigmentation of, due to vitamin-A deficiency, III, 829.  
   gold. See Chrysiasis.  
 radiosensitivity of, in newborn rats, III, 56.  
 radiosensitivity and temperature of, in newborn rats, III, 713.  
 respiration of, effect of germicide on, yeast extracts for protection against, III, 914.  
 sensibility of, anatomy and physiology of, III, 684.  
   transfer of, to compounds, III, 858.  
   surface of, acidity of, III, 532.  
   temperature of, effect of spinal nerve root lesions on, III, 377.  
 tests on, in allergy, III, 71.  
 tissues, interstitial, effect of structure on fluid transport in, III, 200.  
 transplantation of, autoplasmic and homoplasmic, in frogs, III, 6.  
 uninvolved, histology of, in psoriasis, III, 286.  
 water content of, dietary control of, in albino rats, III, 624.  
 wounds in, effect on, of X-rays, III, 931.  
 See also Epidermis.

**Skin diseases**, allergic, histaminase treatment of, III, 499.  
 amyloidosis of. See under Amyloidosis.  
 bacterial, treatment of, with copper, III, 167.  
 cancer of, development of, from methylcholanthrene, effect of  $\alpha$ -estradiol benzoate on, III, 822.  
   from 20-methylcholanthrene in mice, III, 613.  
 effect of, on faces, III, 318.  
 pyogenic, treatment of, with sulphathiazole, III, 411.  
 sarcoma of. See under Sarcoma.  
 treatment of, with Grenz-rays, III, 339.  
   with merfen, III, 547.  
   with radium pads and radon ointment, III, 714.  
   with sulphonamides, III, 919.  
 tumours of, benzpyrene-induced, effect of light on, III, 822.  
   multiple, after 9:10-dimethyl-1:2-benzanthracene painting of mice, III, 533.

**Skull**, bone growth in, measurement of, III, 728.  
 cephalogyric reactions of non-labyrinthine origin in, III, 740.  
 congenital lacunar. See Lückenschädel.  
 deformity of, III, 6.  
   and syringomyelia, III, 882.  
 discoglossoid, III, 789.  
 human and seal, from Kodiak island, artifacts in, III, 365.  
 laminagraphy of, and intracranial tumour diagnosis, III, 447.  
 mosaic pattern of, effect of thyroparathyroidectomy and thyroid feeding on, in rat, III, 118.  
 pressure in, treatment of, with calcium, in infants, III, 20.  
 sclerotic areas in, in Paget's disease, III, 657.  
 See also Brain and Head.

**Sky**, night, spectrum of, I, 222, 285.  
 ultra-violet, I, 287.  
 sensitisation of, industrial, III, 929.  
 ultra-violet rays in, in high altitudes, I, 257.  
 intensity of, I, 310.

**Sleeping sickness**, rhodesiense, autopsy on, III, 448.  
 treatment of, with arsenicals, III, 925.

**Slides**. See under Microscopes.

**Slide rule** for electrode and potentiometric calculations, I, 343.

**Slit-lamp**, and corneal microscope, III, 742.

**Small-pox**, diagnosis of, chorion-allantoic membrane infection as test for, III, 650.

**Smell**, sense of, III, 449.

**epiSmilagenin**, and its acetate, II, 265.

**Smoking**. See Tobacco smoke.

**Snakes**, rattle-. See Rattlesnakes.

**Sneezing**, disinfection against, by hypochlorites, III, 779.

**Snuffs**, antiseptic, III, 259.

**sulphathiazole**. See under Sulphathiazole.

**Soaps**, adherent to platinum ring, dermatitis due to, III, 843.  
 colloid chemistry of mixtures of cresol, water, and, I, 142.  
 diffusion of, I, 322.  
 effect of, on mastitis streptococci, III, 547.  
 fibres, orientation of micelles in, I, 266.  
 invert, II, 289.  
 mixed solvents for, I, 202.  
 pharmacology of, III, 547.  
 sodium, anhydrous, heats of transition of phases of, I, 100.  
 solutions of, at vaseline oil-water interfaces, I, 203.  
 sulphur, treatment with, of scabies, III, 411.

**Soap bubbles**, spherical, collapse time of, I, 360.  
 surface tension of, I, 264.

**Soap solutions**, dilute, constitution of, I, 99, 296.

**Sodalite**, Magnet Cove, Arkansas, I, 252.

**Sodium**, adsorption, evaporation, and migration of, on molybdenum and tungsten, I, 355.  
 anisotropy of electrical resistance of, I, 12.  
 atoms, excited, quenching of, I, 372.  
 deuteron bombardment of, I, 287.  
 films on tungsten, secondary electron emission from, I, 311.  
 inverse Stark effect and electrical double refraction in, I, 254.  
 liquid, electrical resistance of, I, 30.  
 radioactive, transfer of, across placenta in sows, III, 605.  
 X-ray reflexion and elastic anisotropy of, I, 135.  
 vapour, light absorption by, I, 77.

**Sodium alloys**, with lead, I, 53.

**Sodium compounds**, effect of intake of, on asthma in children, III, 710.  
 in plant nutrition, III, 358.

**Sodium salts**, treatment with, of diabetes, III, 475.

**Sodium azide**, spectrum of, absorption, ultra-violet, I, 351.  
 bismuthate, I, 210.  
 borate, calorimetry of aqueous solutions of, I, 175.  
 solubility of, I, 360.  
 bromide, apparent and partial volumes of, in glycol, I, 15.  
 density of, I, 392.  
 bromide, chloride, and fluoride, equilibrium of, with the potassium salts, I, 63.  
 carbonate, equilibrium of, with sodium phosphate and water, I, 360.  
 solubility of, in fused sodium hydroxide, I, 298.  
 bicarbonate. See Sodium hydrogen carbonate.  
 chlorate, production of, electrochemically, from the chloride, I, 272.  
 chloride, coloured, photodichroism of, I, 260.  
 compounds of, with magnesium chloride, I, 240.  
 crystals of, for optical use, I, 180.  
 density of, I, 382.  
 effect of, on vitamin-B deficient rats, III, 40.  
 electrical conductivity of, mixed with niobium or zirconium chloride, I, 368.  
 electrical conductivity and ionic mobilities of aqueous solutions of, I, 206.  
 equilibrium of, with ferric chloride, I, 240.  
 excretion of, effect of pitressin on, III, 124.  
 $\alpha$ -pure, preparation of, I, 338.  
 hypertonic solutions of, treatment with, of alcoholic hallucinosis and delirium tremens, III, 675.  
 iodised, adequacy of, for goitre prevention, III, 684.  
 precipitates, ageing of, I, 403.

**Sodium chloride**, spectrum of, absorption, in heavy and ordinary water, I, 287.  
 near infra-red, I, 353.  
 surface tension and concentration of solutions of, I, 142.  
 transference numbers of, I, 206.  
 treatment with, of hypopituitarism, III, 122.  
 use and abuse of, in paediatrics, III, 46.  
 vapour pressures of saturated aqueous solutions of, I, 141.  
 viscosity of aqueous solutions of barium or magnesium chloride and, I, 52.  
 water balance with, in man after exercise in heat, III, 170.  
 chloride and nitrate, equilibrium of, with the lithium salts, I, 63.  
 chromate, solubility of, I, 360.  
 dichromate, density of solutions of, I, 141.  
 hexa- and hepta-fluorobates, I, 180.  
 fluoride, fermentation inhibition by, III, 848.  
 poisoning by. See under Poisoning.  
 thermodynamic properties of aqueous solutions of, I, 65.  
 hydride, existence of, in interstellar space, I, 287.  
 hydrogen carbonate, effect of, on gastric activity, III, 316.  
 prevention of renal lesions by, after sulphathiazole dosage, III, 336.  
 treatment with, of diabetic ketosis, III, 511.  
 hydroxide, analysis of, in solution with zinc hydroxide, I, 248.  
 electrolytic conductivity of, I, 240.  
 heat of dilution and specific heat of, in concentrated solutions, I, 330.  
 kinetics of reaction of, with ethylene chlorohydrin, I, 207.  
 hypochlorite, dermatitis from, III, 337.  
 solutions, preparation of, electrolytically, I, 333, 336.  
   for burn treatment, III, 280.  
 iodide, treatment with, of bovine actinobacillosis, III, 413.  
 nitrate, Chile, twinning of crystals of, I, 12.  
 crystals of, for optical use, I, 180.  
 determination of, in sodium nitrite, I, 339.  
 nitrite, effect of, on blood pressure in hypertensive rats, III, 926.  
 oxide, compounds of praseodymium and lanthanum oxides and, I, 209.  
 isotherms of mixtures of, with sulphur trioxide and water, I, 63.  
 orthoperiodate, I, 210.  
 phosphate, equilibrium of, with sodium carbonate and water, I, 360.  
 treatment with, of diabetes, III, 551.  
 hexametaphosphate, as anticoagulant, III, 872.  
 effect of, on complement action of serum, III, 11.  
 hexameta- and tripoly-phosphates, calcium complexes of, I, 304, 305.  
 silicate, action of, on manganous salts, I, 406.  
 constitution of solutions of, I, 168.  
 silicophosphates, anhydrous, I, 209.  
 sulphate, vapour pressure of saturated aqueous solutions of, I, 141.  
 monothioorthophosphate, I, 209.  
 thiosulphate, reaction of, with sulphur dioxide, I, 373.  
 solubility of, I, 360.  
 solutions, stable, I, 339.  
 stabilisation of, I, 71.  
 standard, stability of, I, 407.  
 standardisation of, with potassium dichromate, I, 277.

**Sodium organic compounds** :—  
 Sodium pentachlorophenoxide, toxicity of, to fish, III, 772.  
 nitroprusside, decomposition of hydrogen peroxide by, I, 178.  
 poisoning by. See under Poisoning.  
 toxicology of, III, 772.  
 phenoxide, reaction of, with *n*-butyl bromide, I, 243.  
 phenylacetylde, reaction of, with phenylcarbamide, II, 280.

**Sodium determination** :—  
determination of, in organic compounds, chromatographically, I, 375.  
in plant materials, III, 181.  
polarographically, I, 340.  
with beidellite membranes, I, 396.  
with uranyl zinc acetate, I, 340.

**Sodium wire**, press for, I, 343.

**Soils**, bacteria in, producing bactericides, III, 939.  
staining technique for, III, 939.  
Claremont tunnel, Beverley Hills, water, gas, and oil in, I, 215.  
micro-organisms in, phenol-decomposing and -resistant, III, 421.  
reaction of, with higher plants, III, 423.  
São Paulo, manganese in, I, 412; III, 949.

**Sols**. See Colloidal solutions.

**Solanum**, alkaloids of, II, 157.  
*Solanum auriculatum* and *aviculare*, alkaloids of, II, 157.  
*Solanum lycopersicum*, juice, effect of, on animal cells, III, 951.  
on plant growth and seed germination, III, 949.

**Solar spectrum**. See under Sun.

**Solar system**, age of, from meteorites, I, 216.

**Solasodine**, derivatives of, II, 157.

**Solasoline**, constitution of, II, 157.

**Solauridine**, and its derivatives, II, 157.

**Solauricine**, II, 157.

**Soldiers**, digestive disorders in, III, 242.

**Solids**, activation effects in, by irradiation, I, 273.  
adhesion of liquids to, I, 325, 360.  
amorphous, structure of, I, 354.  
viscosity, dielectric relaxation, and place interchange processes in, I, 201.  
anisotropic and isotropic, X-ray crystal structure of, I, 259.  
chemical processes with, I, 304, 334.  
creep and plastic deformation of, I, 347.  
crystalline, thermal energy of, I, 226.  
density of, pyknometrically, I, 392.  
dielectric losses in, I, 8.  
disperse structure of, I, 331.  
and thermodynamics, I, 391.  
electrical contact between, I, 229.  
electrical properties of, I, 21, 43, 238, 320.  
energy states of, I, 321.  
friction between, I, 199.  
heat of phase transformation in, I, 357.  
infra-red reflexion of liquids adsorbed on, I, 196.  
ion exchange between solutions and, I, 110.  
mechanical properties of, I, 88.  
microporous, calculation of surface area of, I, 171.  
mixed, disperse structure of, I, 291.  
thermodynamics of, I, 290.  
opaque and translucent, refraction patterns of, I, 11.  
photo-activity of, I, 108.  
plastic properties of, I, 48, 137.  
rate of heterogeneous reactions at phase boundaries of, I, 301.  
reactions of, I, 152, 160, 235, 274, 275.  
at high temperatures, I, 211, 274, 334.  
specific heat of, theory of, I, 196.  
stressed, "flow" in, I, 167.  
surfaces of, energy of, I, 295, 325.  
systems of. See under Systems.  
ultrasonic dispersion and fracture velocity of, I, 14.  
unstable forms of, I, 47.  
wetted, friction between liquids and, I, 19.

**Solid state**, I, 230.

**Solubilisation**, I, 172.

**Solubility**, chemical constitution and, I, 170.  
low, determination of, nephelometrically, I, 170.  
measurement of, by residual volume method, I, 337.  
of gases, and partial pressure, I, 367.  
of salts, I, 202.  
and their mixtures, I, 360.

**Solutes**, donor, solubility of, in hydrogen-bonding solvents, I, 54.  
molar volumes of, I, 293.  
mol. and ionic weights of, I, 262, 294.

**Solutions**, analysis of, spectrographic, with Lundegårdh apparatus, I, 116.  
aqueous, dilute, equilibria in, I, 144.  
saturated, vapour pressures of, I, 141.  
vapour pressures of, at high temperatures, I, 293.  
chemiluminescence in, I, 6.  
chromatography of, I, 159.  
concentration of, apparatus for, I, 378.  
by adsorption, I, 337.  
determination of, II, 388.  
diffusion coefficients in, I, 91.  
dilute, ideal, laws of, I, 236.  
theory of, I, 20.  
dilution of, progressive, effect of, I, 393.  
dipole moments in, I, 9.  
electric polarisation and association in, I, 91.  
electrolyte, "internal friction Wien effect" in, I, 16.  
high-frequency energy losses in, containing macro-molecules, I, 58.  
in liquefied gases, spectrophotometry of, I, 82.  
interfacial, unstable, I, 95.  
ion exchange between solids and, I, 110.  
kinetics of, turbidimeter for, I, 214.  
liquid-in-liquid, determination of concentration of, I, 276.  
micelle-forming, surface tension of, I, 264.  
mixed, binary, vapour pressure curves of, I, 16.  
mixing of, volume changes in, I, 358.  
non-aqueous, electrochemistry of, I, 297.  
relative viscosity of, I, 263.  
non-ideal, vapour-liquid equilibrium of, I, 329.  
of gases in liquids, I, 90.  
of two liquids, thermodynamic theory of, I, 146.  
optically-active, streaming double refraction in, I, 308.  
pressure-volume-temperature relations in, I, 15.  
radioactive study of, I, 262.  
solid, I, 17.  
binary, statistical mechanics of, I, 205.  
thermodynamic properties of, I, 92.  
deviation from Vegard's rule of, I, 17.  
spectra of, I, 40.  
standard, I, 407.  
supersaturated, rate of formation of nuclei in, I, 16.  
surface structure of, I, 171.  
surface tension of, interfacial, I, 264.  
surface tension, internal pressure, vapour pressure, and osmotic pressure of, I, 91.  
tension in, I, 16.  
theory of, I, 16, 262.  
viscosity of, I, 16, 168.  
effect of solvation on, I, 293.

**Solvents**, immiscible, separation of mixtures by, I, 378.  
non-aqueous, ionisation in, I, 366.  
organic, ionising power of, I, 145.

**Somnolence**, periodic, and morbid hunger. See Kleine-Levin syndrome.

**Sophochrysin**, and its salts, II, 429.

*Sophora* alkaloids, II, 429, 863.

*Sophora chrysophylla*, alkaloids of, II, 429.

*Sophora japonica*, sophorabioside from, II, 302.

*Sophorabioside*, and its derivatives, II, 302.

*Sorbic acid*, electrolytic reduction of, II, 73.

*isoSorbide dinitrate*, II, 215.

*Sorbitol*, metabolism of. See under Metabolism.

*D-Sorbitol*  $\epsilon$ -*dibenzoate*  $\alpha\gamma\delta$ -*tetraacetate*, II, 390.

*l-Sorbose*, II, 251.

*pentapropionate*, II, 79.

**Sorghum**, chromosomes, inert, mitosis and activity of, III, 190.  
flowers, purple pigment at base of anthers in, III, 360.

**$\alpha$ -Sorinin**, structure of, II, 47.

**Sound**, absorption of, in gases and liquids, I, 140.  
bone-conducted, sensitivity to, III, 520.  
diminished velocity of, in fluids, at high frequencies, I, 49.  
velocity of, in liquids, and viscosity, I, 392.  
in relation to chemical constitution, I, 14.  
in relation to molecular volume, I, 356.  
temperature variation of, I, 138.  
measurement of, I, 251.

**Sound waves**, pressure of, in liquids and gases, I, 9, 48.

**Soya beans**, Biloxi, growth of, in response to nitrate and phosphate in nutrient solution, III, 423.  
goitrogenicity of, III, 404.

**Soya-bean plants**, nodules and roots of, assay of, III, 424.

**Sparking**, of elements on alundum wheels, I, 139.

**Spartiodine**, action of, III, 771.

**Spasmolytics**, effects of, on gastric function, III, 630.

**Spasticity**, neurology of, III, 377.

**Spectra**, absorption, analysis of, I, 39, 164, 225.  
and constitution, II, 161, 164.  
and constitution of dyes, II, 8.  
dispersion due to weak bands in, I, 44.  
infra-red, of gases, I, 39.  
near infra-red, of organic homologues and isomerides, I, 193.  
of organic compounds in solution, I, 81.  
of polycyclic internally-complex compounds, I, 352.  
of unsaturated compounds due to electron cloud oscillations, I, 225.  
structure and, II, 102.  
ultra-violet, of gases, I, 221.  
of organic compounds, I, 81.  
photodensitometer for, I, 74.

**arc**, I, 253.  
in mixtures of nitrogen, oxygen, and water vapour, I, 403.  
resonance lines in, I, 186.  
band, perturbations in, I, 38.  
classification of, wave-length data for, I, 189.  
comets'. See under Comets.  
complex, theory of, I, 221.  
vector coupling in, I, 285.  
electronic, of molecules, I, 192.  
emission, of organic compounds in glow discharge, I, 313.  
ultra-violet, of methyl variables, I, 221.  
of organic compounds, by electron excitation in discharge tubes, I, 226.

**La emission**, of heavy elements, I, 222.

**equal energy**, production of, I, 280.

**excitation of**, by high-frequency discharge, I, 313.

**formula for configuration  $d^2$  in**, I, 253.

**infra-red**, of hydrocarbons, I, 313.  
of liquids, I, 132.  
of polyatomic molecules, I, 83.  
of symmetrical XV<sub>2</sub>Z molecules, I, 313.

**intensity of lines in**, I, 189.

**inverse Stark effect and electrical double refraction in**, I, 254.

**isotopic displacement of, meson theory of**, I, 5.  
of solutions, I, 40.  
electron band association in, I, 225.  
perturbations in, near predissociation limits, I, 6.

**photo-electric measurement of lines in**, I, 158.

**photographing of**, I, 155.

**positive-ray glow**, polarisation in, I, 349.

**Raman**, I, 41, 83, 165, 315.  
analysis by means of, I, 247.  
constitution and, I, 387; II, 373.  
crystal powder apparatus for, I, 83.  
depolarisation of lines in, I, 314.  
effect of temperature on, I, 387.  
hydrogen bonds and, I, 227, 315.  
in optical glasses, I, 83.  
intensity of lines in, and temperature, I, 227.  
of acetylenes, I, 227.  
of aliphatic hydrocarbons, I, 226.  
of crystals, I, 289.  
excited by mercury radiations, I, 387.  
of gases and liquids, I, 195.  
of organic compounds, I, 315.  
of partially miscible liquids, I, 359.  
of polyatomic molecules, I, 83.  
of sugars, I, 227.

**$\beta$ -ray**, magnetic field measurement for, I, 411.  
use of magnetic lenses for, I, 222.

**X-ray**, I, 1.  
absence of  $M\beta$  satellite intensity anomaly from, I, 381.  
absorption, applications of, I, 254.

**Stilboestrol**, treatment with, of menopausal arthralgia, III, 524.  
 of mental symptoms of menopause, III, 524.  
 of prostatic hypertrophy, III, 523.  
**Stilboestrol group**, ketones of, II, 58.  
 biological activity of, III, 132.  
**Stiles-Crawford effect**, III, 681.  
**Stills**, molecular, I, 250.  
 vacuum, in medicine, III, 503.  
**Stillbirth**, and abortion, categories of, III, 892.  
 causes and control of, in pigs, III, 814.  
**Stipitatie acid**, and its derivatives, II, 242.  
**Stirrers**, laboratory, for viscous and foamy liquids, I, 214.  
 high-speed, I, 75.  
**Stitch**, cause of, III, 16.  
**Stokes-Adams syndrome**, treatment of, with cardiazol, III, 441.  
**Stolzite**, crystal structure of, I, 219.  
**Stomach**, absorption from, of undigested protein, III, 240.  
 acidity of, control of, duodenal mechanism for, III, 817.  
 electrode for recording, in man, III, 142.  
 in relation to fear, III, 815.  
 activity in, effect on, of acetylsalicylic acid, calcium gluconate, and sodium bicarbonate, III, 316.  
 adenocarcinoid of, III, 466.  
 adenomatous lesions in, intrapulmonary transplantation of, in mice, III, 401.  
 antacids in, III, 142.  
 cancer of, III, 152.  
 atrophic gastritis in, III, 816.  
 contents of, analysis of, after test meals, III, 392.  
 contractions of, potassium liberation during, III, 142.  
 diseases of, effect on, of bismuth carbonate, III, 317.  
 gastroscopy and histology of, III, 392.  
 emptying of, III, 894.  
 effect on, of drugs, in man, III, 816.  
 of fats, III, 30.  
 of vitamin-B complex deficiency, III, 816.  
 rate of, after intragastric administration of glucose solutions, III, 691.  
 time of, effect of sodium amylal on, III, 166.  
 function of, after pyloric obstruction and gastro-enterostomy, III, 241.  
 effect on, of spasmolytics, III, 630.  
 of vitamin-A deficiency, III, 240.  
 of vitamin-B<sub>1</sub> deficiency, III, 240.  
 glucose absorption and expulsion from, III, 142.  
 granuloma of, from stomach, III, 691.  
 hemorrhage of, renal failure after, III, 898.  
 treatment of, III, 894.  
 hair ball in, III, 393.  
 intramural innervation of, in cats, III, 317.  
 intrinsic factor secretion in, site difference of, in hog and man, III, 435.  
 lesions in, production of, by fasting, partial inanition, and dietary deficiency, III, 696.  
 motility of, action on, of bulbocapnine, harmaline, and harmine, in rabbits, III, 708.  
 of tyramine, in rabbits, III, 708.  
 in disease, III, 691.  
 in relation to muscular twitching during sleep and dreaming, III, 816.  
 in thyroid deficiency, III, 116.  
 inhibition of, by carbon dioxide and oxygen inhalation, III, 607.  
 motility and secretion in, meal temperature in relation to, III, 815.  
 mucosa of, carbohydrate exchange in, III, 317.  
 neutral-red excretion by, visualised gastroscopically, III, 607.  
 of chronic alcoholic addicts, III, 393.  
 secretion-stimulating property of, III, 317.  
 transplanted adenocarcinoma of, enzymic activity of, III, 824.  
 mucus of, protein digestion by, III, 692.  
 papillomatosis of, from vitamin-A deficiency, III, 252.  
 phytobezoar in, III, 527.

**Stomach**, pyloric, adenocarcinoma of, induced by methylcholanthrene, III, 397.  
 resection of, blood-sugar and general complaints after, III, 753.  
 secretion in, blood-calcium in relation to, III, 241.  
 effect of yeast extract injection on, III, 142.  
 humoral stimulation of, III, 456.  
 in enterectomised dogs, III, 240.  
 neurohypophyseal in relation to, III, 815.  
 tubing for, for small animals, III, 446.  
 See also Gastric juice, etc.  
**Stomatitis**, cyclical, treatment of, and vulvitis, with hormones, III, 232.  
 ulcerative, with vulvitis, treatment of, with oestrogen, III, 311.  
**Stopcocks**, ether-insoluble lubricant for, I, 214.  
 injection and sampling, I, 378.  
 metal, large-capacity, I, 378.  
**Strabismus**. See Squint.  
**Stramonium**, assays of, biological and chemical, III, 261.  
 straw, digestion of, by ruminant, III, 693.  
**Strawberries**, parthenocarpic, formation of, III, 74.  
**Streptobacillus moniliformis**, cultures, lipin structures in, III, 494.  
**Streptococci**, action on, of penicillin, III, 344.  
 anaerobic, III, 423.  
 antisera to, neutralising ability of, III, 349.  
 cross-infection with, in wards, III, 648.  
 cultures of, pigment in, III, 719.  
 enrichment of, by thallium salts, III, 854.  
 formation by, of serologically reactive material in broth containing sucrose, III, 66.  
 grouping tubes for, III, 648.  
 growth factor for, III, 494.  
 hæmolytic, III, 66, 494.  
 agglutination of, in sera, III, 494.  
 agglutinins in antisera to, III, 349.  
 biological activity of, in relation to cell composition, III, 942.  
 cross infection by, of wounds in hospital, III, 349.  
 culture of, under carbon dioxide tension, III, 942.  
 detection of protective bodies against, in serum, III, 369.  
 from parturient women, III, 559.  
 growth factors for, III, 67.  
 in throats, III, 559.  
 puerperal infection from, III, 559.  
 typing of, III, 719.  
 hæmolytic A, Lancefield group, antigenic structure of, III, 494.  
 leucocidin of, III, 782.  
 typing of, III, 783.  
 infections with, action of sulphanilamide derivatives on, in mice, III, 409.  
 treatment of, with sulphanilamide and sulphapyridine, III, 544.  
 with sulphapyrimidine, III, 839.  
 lactic, bacteriophages for, III, 349.  
 mastitis, effect on, of soaps and other disinfectants on, III, 547.  
 skin reactions in rabbits sensitised to, III, 66.  
 sulphonamide-resistant, III, 839.  
 α-Streptococci, association of, with various diseases, III, 942.  
 hæmolytic, response of, to sulphonamides, III, 543.  
**Streptococcus agalactiæ**, Hotis reaction with, III, 66.  
**Streptococcus faecalis**, bactericidal action of sulphathiazole on, III, 839.  
 glucose fermentation by, phosphorus transformation during, III, 349.  
**Streptococcus hæmolyticus**, effect of tyrothricin on, in rhino-pharynx of carriers, III, 707.  
 infection by, tissue reactions in, III, 66.  
 skin infections produced by, treatment of, with X-rays, III, 933.  
 virulence of, III, 719.  
**Streptococcus pyogenes**, infection by, in plastic surgery ward, III, 495.  
**Streptococcus salivarius**, isolation of, medium for, III, 67.

**Streptococcus viridans**, growth of, bacteriostatic effect of sulphonamides on, III, 625.  
 infections by, effect on, of sulphonamides, etc., III, 159.  
**Streptolysin**, preparation of, pure, III, 721.  
**Streptolysin-O**, purification and properties of, III, 265.  
 study of, III, 265.  
**Streptothricin**, as bacteriostatic and bactericidal agent, III, 629.  
**Strongylocentrotus pulcherrimus**, eggs of, cell-surface of, during cleavage, III, 284.  
**Strongyloides**, immunity to, vitamin-A and, III, 328.  
**Strongylosis**, equine, treatment of, with phenothiazine, III, 414.  
**Strongylus**, equine, eggs and larvæ of, survival and development of, III, 35.  
**Strontianite**, in Münster district, I, 251.  
**Strontium**, biochemistry of, III, 837.  
 magnetic susceptibility of, I, 137, 231.  
 spectrum of, β-ray, I, 383.  
**Strontium bismuth oxyhalides**, crystal structure of, I, 259.  
 chloride, activity coefficient of, I, 240.  
 chromate, synthesis and decomposition of, I, 152.  
 thermal decomposition of mixtures of, with calcium oxide, I, 152.  
 with magnesium oxide or its oxide or its carbonate, I, 152.  
 nitrate, equilibrium of, with calcium nitrate and water, I, 330.  
 solubility of, I, 360.  
 sulphide, phosphors. See under Phosphors.  
**Strontium determination** :—  
 determination of, in lopidolite, by photographic spectra, I, 249.  
 in presence of calcium, I, 307.  
**g-Strophanthidin**, and its derivatives, II, 396.  
**Strophanthin**, effect of, on cat's muscle, III, 104.  
**g-Strophanthin**, and its derivatives, II, 396.  
 structure of, II, 232.  
 susceptibility to, of warm-blooded animals, III, 709.  
**Structure**, algebra of, I, 165.  
 chemical investigations of, II, 290, 384, 426, 428.  
**Structure constant** from X-ray spin-doublet splitting, I, 222.  
**Struma diffusa colloides**, congenital, III, 306.  
**Strychnine**, hydrogen sulphate, solubility of, in sulphuric acid, I, 141.  
 reaction of, with hydrobromic acid, II, 385.  
 reduction of, electrolytic, II, 336.  
 separation of, from quinine, II, 244.  
**isoStrychnine**, reaction of, with hydrobromic acid, II, 385.  
**Strychnos alkaloids**, II, 39, 290, 385.  
**Sturge-Weber syndrome**, III, 98.  
**Stylonychia pustulata**, vacuolar frequency of, III, 938.  
**Stylophorum diphyllum**, alkaloids of, II, 275.  
**Styrene**, condensation of, with maleic anhydride, II, 354.  
 determination of, by bromination, II, 44.  
 inflammability and ignition temperature of, in air, I, 269.  
 polymerisation of, in presence of carbon tetrachloride, I, 67.  
 in thymol solution, I, 104.  
 inhibited by p-benzoquinone, II, 357.  
 preparation of, from phenylmethylcarbinol, II, 354.  
**Styrene**, α,p-dibromo-, II, 13.  
**Styrenes**, substituted, addition to, of ethyl maleate and maleic anhydride, II, 53.  
**ms-Styryl-1:2:7:8-dibromoxanthanol**, and its perchlorate, II, 375.  
**ms-Styryl-1:2:7:8-dibenzoxanthene**, II, 375.  
**ms-Styryl-1:2:7:8-dibenzoxanthene**, perchlorate, ms-chloro-, II, 376.  
**ms-Styryl-1:2:7:8-dibenzoxanthanol**, ms-chloro-, II, 376.  
**4-Styryl-1-methylglyoxaline**, 5-nitro-, II, 238.  
**5-Styryl-1-methylglyoxaline**, 4-nitro-, II, 238.  
**2-Styryl-1:3:4-thiodiazole**, 5-amino-, and its derivatives, II, 290.

- Styrylxanthenium series, dehydrenium salts of**, II, 375.
- 9-Styrylxanthylium perchlorate**, II, 194.
- Subarachnoid space**, hypertonic glucose and saline solution flow into, in dogs, III, 587.
- Sublimation apparatus**, I, 251.
- Substance V**, from adrenal cortex, II, 413.
- Substantia reticularis**, extrapyramidal motor function of, III, 301.
- Substitution**, in aliphatic compounds, II, 213.
- in aromatic compounds, II, 52.
- ionic, activation energy of, I, 148.
- ortho-, hindrance of resonance by, I, 83.
- Succindi-6-methoxy-8-quinolylamide**, II, 31.
- 2,2'-N<sup>4</sup>N<sup>4'</sup>-Succindi(sulphanilamidothiazole)**, II, 429.
- Succinic acid**, decomposition and excretion of, in animal body, III, 543.
- effect of, on growth of micro-organisms, III, 851.
- solubility of, I, 360.
- Succinic acid**, bornyl hydrogen ester, II, 369.
- ethyl ester, inhibition by, of olive oil action on tuberculosis in guinea-pigs, III, 773.
- Succinic acids**, substituted, II, 259.
- Succinic anhydride**, condensation of, with orcinol and resorcinol, II, 261.
- reaction of, with resorcinol derivatives, II, 198.
- Succinic-oxidase**. See under Oxidase.
- 2-p-Succinimidobenzenesulphonamidothiazole**, II, 429.
- Succin-6-methoxy-8-quinolynylimide**. See *N*-6-Methoxy-8-quinolylsuccinimide.
- Succino-dehydrogenase**. See under Dehydrogenase.
- Succinoxidase**. See under Oxidase.
- Succinylsulphathiazole**, action of, in gastro-intestinal tract, III, 839.
- bacteriostatic effect of, in gastro-intestinal tract, III, 480.
- clinical use of, III, 768.
- Sucrose octaazobenzene-4-carboxylate**, II, 395.
- b.p. elevation of solutions of, I, 52.
- inversion of, acid catalysis of, I, 176.
- in relation to dielectric constant of solvent, I, 104.
- photographing crystal structure of, I, 116.
- octapropionate**, II, 79.
- solubility of, I, 360.
- iso*Sucrose, nature of, II, 279.
- Sugars**, acetates, condensation of, with acetyl-glycosyl halides, in relation to Walden inversion, II, 80.
- acyclic derivatives, action of diazomethane on, II, 395.
- azoyl derivatives of, II, 395.
- detection of, by osazones, II, 388.
- determination of, in biological fluids, III, 360.
- propionates of, II, 79.
- distillation of, II, 79.
- separation of, from amino-acids and amino-sugars, II, 350.
- separation of mixtures of, by distillation of their propionates, II, 79.
- spectra of, Raman, I, 227.
- Sugar acids**, fermentation of, by bacteria, III, 345.
- Sugar alcohols**, III, 44.
- Sugar cane**, leaves, determination in, of carbohydrates, III, 950.
- sucrose synthesis in, III, 73.
- Sulphacetamide sodium**, local treatment with, of corneal ulcers, III, 767.
- Sulphacetimide**. See Albucid.
- Sulphadiazine**. See Sulphapyrimidine.
- Sulphaguanidine**, concentration of, in peripheral blood after introduction into colon, III, 627.
- detection and determination of, II, 388.
- effect of, on *Salmonella* infection, III, 706.
- eruption due to, III, 628.
- excretion of, in faeces, III, 919.
- in nutrition experiments, III, 42.
- treatment with, of brucellosis, III, 919.
- of colitis and other bowel infections, III, 920.
- of diarrhoea in children, III, 919.
- Sulphaguanidine**, treatment with, of dysentery, III, 706.
- of enteric infections, III, 627, 706.
- of enteritis in swine, III, 920.
- of intestinal disease, III, 839.
- of lymphogranuloma venereum in mice, III, 920.
- of proctitis due to lymphogranuloma venereum, III, 411.
- of typhoid fever, III, 480.
- of ulcerative caecitis, III, 480.
- of ulcerative colitis, III, 480.
- Sulphamethazine**, III, 917.
- Sulphamethylthiazole**, polyneuritis due to, III, 921.
- treatment with, III, 161.
- of endocarditis, neuritis after, III, 480.
- of septicæmia, III, 706.
- p*-Sulphamylanilinoaminopyrimidines, II, 151.
- p*-Sulphamylanilinopyrimidines, II, 151.
- 4'-Sulphamylidiphenyl-4-arsinic acid**, and its ammonium hydrogen salt, II, 158.
- 4'-Sulphamylidiphenyl-4-diiodoarsine**, II, 158.
- Sulphanilamide**, acetylation of, III, 258.
- action of, III, 334, 476.
- and its derivatives on fungi, III, 411.
- in vitro*, III, 67.
- on bacterial metabolism, III, 851.
- on *C. diphtheriae*, III, 545.
- on wound healing, III, 48.
- activity of, against *E. coli*, compared with other sulphonamides, III, 47.
- and its derivatives, N<sup>4</sup>-silver salts, II, 138.
- and related chemotherapeutic agents, III, 767.
- antagonism of, by xylose, III, 851.
- antibacterial derivatives of, II, 221.
- application of, III, 336.
- bacteriostatic activity of, and azochloroamide, on streptococcus A and enterococcus, III, 48.
- and its derivatives, III, 839.
- basicity of, I, 205.
- biochemical specificity of, III, 705.
- compounds, treatment with, of anthrax infection, III, 335.
- concentration of, in blood, compared with sulphapyridine, III, 704.
- conjugation and retention of, effect of fasting on, in rabbits, III, 705.
- crystals, detection of, in urine, III, 477.
- derivatives of, II, 146.
- action of, III, 916.
- in streptococcal and pneumococcal infections in mice, III, 409.
- heterocyclic, II, 150.
- Innenkörper reactions in anæmia with, III, 628.
- detection of, clinically, III, 917.
- detection and determination of, II, 388.
- determination of, and its derivatives, in blood, III, 704.
- in body fluids, III, 477.
- error due to novocaine in, III, 917.
- in biological fluids, III, 46.
- diffusion of, III, 917.
- into artificial peritoneal fluid, III, 625.
- erythrocyte fragility changes produced by, III, 48.
- fetal injury from, during pregnancy, III, 707.
- growth inhibition by, protection against by *p*-aminobenzoic acid, III, 949.
- growth stimulation by, III, 705.
- in experimental cerebral wounds, III, 767.
- in joint and pleural fluids, III, 625.
- in scarlet fever, compared with antitoxin and serum, III, 706.
- ingested, in milk and urine of infant, III, 917.
- ingestion of, III, 835.
- inhibition by, of bacterial growth, III, 557.
- intraperitoneal, III, 838.
- pemphigus-like eruption after sulphapyridine and, III, 480.
- percutaneous application of, in animals and men, III, 837.
- phagocytosis by leucocytes in solutions of, and its derivatives, III, 918.
- streptococcal activity of, III, 67.
- structure of, X-ray, I, 355.
- Sulphanilamide**, surface behaviour of, III, 639.
- test for, and its derivatives in blood, III, 334.
- therapeutic activity of, effect of diet on, III, 160.
- toxicity of, influence of diet on, III, 628.
- treatment with, acidosis in, due to carbonic anhydrase inactivation, III, 159.
- of cervical actinomycosis, III, 480.
- of chancroid, III, 47.
- of coccidioid arthritis, III, 628.
- of diphtheria carriers, intranasally, III, 919.
- of ear infections, III, 682.
- of endocarditis, III, 627.
- of erysipelas, III, 919.
- of gas gangrene, III, 919.
- of glomerular nephritis, III, 479.
- of gonorrhoea, III, 478, 768.
- of lymphogranuloma venereum in mice, III, 920.
- of meningitis, III, 65, 335.
- of mononucleosis, III, 479.
- of otitis media in children, III, 160.
- of peritoneal infections, III, 920.
- of pneumonia, III, 47.
- of rheumatism, III, 707, 838.
- of streptococcal infections, III, 544.
- of trachoma, III, 480.
- of vaccinia in rabbits, III, 545.
- of wounds, III, 628.
- yellow atrophy after avertin anaesthesia and, III, 546.
- Sulphanilamides**, III, 543.
- and their N<sup>4</sup>-acetyl derivatives, II, 138.
- growth inhibition by, neutralised by *p*-aminobenzoic acid, III, 491.
- N-substituted, synthesis of, II, 289.
- N<sup>4</sup>-substituted, synthesis of, II, 375.
- treatment with, of septicæmia, III, 335.
- of trachoma, III, 480.
- ω*-Sulphanilamido-*α*-acetoneaphthone, II, 289.
- Sulphanilamidoacetophenones**, II, 289.
- 9-Sulphanilamidoacridine**, and its derivatives, II, 375.
- 2-N<sup>4</sup>-Sulphanilamido-5-*n*-amylthiazole**, and its N<sup>4</sup>-acetyl derivative, II, 208.
- 2-Sulphanilamido-5-*n*-amyl-4-thiazolone**, and its N<sup>4</sup>-acetyl derivative, II, 119.
- 2-Sulphanilamido-5-*n*-amyl-4-thiazolone**, and its N<sup>4</sup>-acetyl derivative, II, 119.
- 2-Sulphanilamidobenziminazole**, II, 120.
- 2-Sulphanilamido-5-bromo-5,6-dihydrothiazine**, II, 120.
- 2-N<sup>4</sup>-Sulphanilamido-5-*n*-butylthiazole**, and its N<sup>4</sup>-acetyl derivative, II, 208.
- 2-Sulphanilamido-5-*n*-butyl-4-thiazolone**, and its N<sup>4</sup>-acetyl derivative, II, 119.
- 9-Sulphanilamidocarbazole**, and its acetyl derivative, II, 375.
- 6-Sulphanilamidochrysene**, II, 375.
- 6-Sulphanilamidocumarin**, II, 375.
- 2-Sulphanilamido-5:5-diethyl-4-thiazolone**, and its N<sup>4</sup>-acetyl derivative, II, 119.
- 2-Sulphanilamido-5:6-dihydrothiazine**, II, 120.
- 5-Sulphanilamido-2:3-dimethyl-8-ethylquinoline**, and its N<sup>4</sup>-acetyl derivative, II, 424.
- 5-Sulphanilamido-2:3-dimethyl-8-*n*-propylquinoline**, and its N<sup>4</sup>-acetyl derivative, II, 424.
- 4-Sulphanilamido-3:5-dimethylpyrazole**, II, 120.
- 2-Sulphanilamido-5:5-dimethyl-4-thiazolone**, and its N<sup>4</sup>-acetyl derivative, II, 119.
- 4-Sulphanilamidodiphenyl**, acetyl derivative, II, 307.
- 2- and 4-Sulphanilamidodiphenyl ethers**, and their acetyl derivatives, II, 375.
- 4'-Sulphanilamidodiphenyl sulphoxide**, 4-nitro-, and its acetyl derivative, II, 308.
- 4-Sulphanilamido-3:5-diphenylpyrrole**, II, 120.
- 4'-Sulphanilamidodiphenylsulphone**, 4-nitro-, and its acetyl derivative, II, 308.
- 2-Sulphanilamido-5:6-diphenyl-1:3:4-triazine**, II, 120.
- 2-Sulphanilamido-6-ethoxy-4-methylpyrimidine**, II, 152.
- 2-Sulphanilamido-4-ethoxypyrimidine**, II, 272.
- Sulphanilamidoethylpyridinium bromide**, II, 222.
- 2-N<sup>4</sup>-Sulphanilamido-5-ethylthiazole**, and its N<sup>4</sup>-acetyl derivative, II, 208.
- treatment with, of malaria in monkeys, III, 840.

- 2-Sulphanilamido-5-ethyl-4-thiazolone, and its  $N^4$ -acetyl derivative, II, 119.  
chemotherapeutic activity of, III, 46.
- 4-Sulphanilamido-2-ethylthiol-6-methylpyrimidine, II, 152.
- 2-Sulphanilamidofluorene, acetyl derivative, II, 307.
- 2-Sulphanilamido- $\alpha$ - $D$ -glucose, and its  $N^4$ -acetyl derivative, II, 351.
- 2-Sulphanilamido- $N$ - $D$ -glucoside, II, 351.
- 2-Sulphanilamido-5- $n$ -hexadecyl-4-thiazolone, and its  $N^4$ -acetyl derivative, II, 119.
- 5-Sulphanilamidohydantoin, II, 120.
- 7-Sulphanilamido-2-hydroxy-3,4-dihydroquinoxaline, II, 120.
- 2-Sulphanilamido-6-hydroxy-4-methylpyrimidine, II, 152.
- Sulphanilamidindazoles, II, 289.
- 3-Sulphanilamidindotriazine, II, 289.
- 5-Sulphanilamido-2-methoxypyridine, II, 120.
- 2-Sulphanilamido-4-methoxypyrimidine, II, 272.
- 5-Sulphanilamido-2-methoxypyrimidine, II, 272.
- 2- $N^4$ -Sulphanilamido-4-methyl-5-amythiazoles, II, 208.
- 2- $N^4$ -Sulphanilamido-4-methyl-5- $n$ -butylthiazole, and its  $N^4$ -acetyl derivative, II, 208.
- 2- $N^4$ -Sulphanilamido-4-methyl-5-ethylthiazole, II, 208.
- 2- $N^4$ -Sulphanilamido-4-methyl-5- $n$ -hexylthiazole, and its  $N^4$ -acetyl derivative, II, 208.
- 2- $N^4$ -Sulphanilamido-4-methyl-5-propylthiazoles, II, 208.
- 2-Sulphanilamido-4-methylpyrimidine, 5-bromo-, II, 152.
- 4-Sulphanilamido-2-methylpyrimidine, II, 272.
- 2-Sulphanilamido-5-methyl-4-thiazolone, and its  $N^4$ -acetyl derivative, II, 119.
- 3-Sulphanilamido-5-methyltriazole, sodium salt, II, 120.
- 3-Sulphanilamidophenanthrene, and its acetyl derivative, II, 375.
- 2-Sulphanilamidophenothiazine, II, 120.
- 9- $m$ -Sulphanilamidophenylphenanthridine, II, 375.
- 2-Sulphanilamido-6-piperidinopyridine, II, 120.
- 2- $N^4$ -Sulphanilamido-4- $n$ -propylthiazole, II, 428.
- 2- $N^4$ -Sulphanilamido-5-isopropylthiazole, and its  $N^4$ -acetyl derivative, II, 208.
- 2-Sulphanilamido-5- $n$ -propyl-4-thiazolone, and its  $N^4$ -acetyl derivative, II, 119.
- 2-Sulphanilamidopyrazine. See Sulphapyrazine.
- 4-Sulphanilamidopyrazole, II, 120.
- 2-Sulphanilamidopyridine, constitution of, II, 30.
- 2-Sulphanilamidopyrimidine, toxicity of, reduction of, by pyridium in mice, III, 628.
- 2-Sulphanilamidopyrimidine, 5-chloro-, II, 272.
- 5-Sulphanilamidopyrimidine, and 2-amino-, and 2-chloro-, II, 272.
- Sulphanilamidopyrimidines, pharmacology of, II, 272.
- 1-Sulphanilamido-1:2:3:4-tetrahydroquinoline, II, 120.
- 2-Sulphanilamidothiazoline. See Sulphathiazoline.
- 2-Sulphanilamido-4-thiazolone, and its  $N^4$ -acetyl derivative, II, 119.
- Sulphanilamidothiazolones, II, 119.
- 2-Sulphanilamidothiophen, synthesis of, II, 112.
- 5-Sulphanilamido-2:3:8-trimethylquinoline, and its  $N^4$ -acetyl derivative, II, 424.
- Sulphanilyladipamic acid, II, 221.
- Sulphanilylaminoguanidine, and its  $N^4$ -acetyl derivative, II, 400.
- Sulphanilyl- $N$ -aminophenylguanidine, II, 400.
- Sulphanilylbenzamide, treatment with, of dysentery, III, 259.
- Sulphanilylbutyldiguanidine, II, 400.
- Sulphanilylbutylguanidine, II, 400.
- Sulphanilylcarbamide, II, 400.
- Sulphanilyl- $p$ -carboxyphenylguanidine, II, 400.
- Sulphanilylchaulmoograme, II, 222.
- Sulphanilylcyanamide, and its derivatives, II, 400.
- Sulphanilyldicyanodiamide, II, 400.
- Sulphanilyldiguanidine, II, 400.
- Sulphanilyldimethylldiguanidine, II, 400.
- Sulphanilylethylisocarbamide, II, 400.
- Sulphanilylethylguanidine, II, 400.
- Sulphanilylethylisothiocarbamide, II, 400.
- Sulphanilylglutamic acid, and its sodium salt, II, 222.
- Sulphanilylguanidine. See Sulphaguanidine.
- Sulphanilylguanylecarbamide, II, 400.
- Sulphanilylmethylisocarbamide, II, 400.
- Sulphanilylmethylisothiocarbamide, II, 400.
- Sulphanilylmyristamide, II, 221.
- Sulphanilylnitroguanidine, II, 400.
- Sulphanilylphenylguanidine, II, 400.
- Sulphanilylpropylguanidine, II, 400.
- Sulphanilyl-2-pyridylguanidine, II, 400.
- Sulphanilylsulphanilic acid sodium salt, treatment with, of rectum stricture, III, 839.
- Sulphanilyl- $\alpha$ -tolylldiguanidine, II, 400.
- Sulphapyrazine, II, 120, 152.  
and its sodium salt, II, 33.  
antipneumococcal activity of, compared with sulphapyridine, sulphapyrimidine, and sulphathiazole, III, 478.  
treatment with, of pneumonia, III, 47.
- Sulphapyridine, activity of, against *E. coli* compared with other sulphonamides, III, 47.  
agranulocytosis due to, recovery from, after rigor during blood transfusion, III, 707.  
antipyretic action of, III, 159.  
concentration of, in blood, compared with sulphanilamide, III, 704.  
crystals, detection of, in urine, III, 477.  
detection of, II, 68.  
detection and determination of, II, 388.  
determination of, in biological fluids, III, 46.  
effect of, on *C. diphtheriae*, III, 545.  
on leucotoxic action of benzene, III, 838.  
on monkeys, III, 336.  
on spirochaetosis recurrens, III, 161.  
on sputum in pneumonia, III, 627.  
in cattle, III, 543.  
in experimental cerebral wounds, III, 767.  
in mixtures with glucose, III, 159.  
intraperitoneal use of, III, 707.  
pemphigus-like eruption after sulphanilamide and, III, 480.  
resistance to, of pneumococci, development of, III, 626.  
sensitivity to, of pneumococci, test for, III, 259.  
sodium derivative, administration of, to children, intramuscularly, III, 625.  
oral administration and solubility of, III, 625.  
treatment with, of pneumonia, III, 477.  
streptococcal activity of, III, 67.  
susceptibility of pneumococci to, III, 478.  
therapeutic incompatibility between, and quinine, III, 626.  
toxicity of, III, 336.  
treatment with, III, 546.  
anuria after, III, 260.  
effect of, on antipneumococcal immunity, III, 626.  
herpes labialis after, III, 259.  
neutropenia after, III, 480.  
of anaerobic infections, III, 161.  
of appendicitis, intraperitoneally, III, 920.  
of bacillary dysentery, III, 259.  
of calf diphtheria, III, 627.  
of cerebrospinal fever, III, 919.  
of cutaneous anthrax, III, 411.  
of endocarditis, III, 47, 410, 545.  
of filariasis, III, 410.  
of fowl cholera, III, 627.  
of gonorrhoea, III, 47, 839.  
of gonorrhoeal urethritis, III, 259.  
of meningitis, III, 65, 161, 335, 839.  
in infants, III, 544, 705.  
of meningitis complicated by cavernous sinus thrombosis, III, 160.  
of molluscum contagiosum, III, 768.  
of ophthalmia neonatorum, III, 767.  
of paratyphoid carriers, III, 706.  
of paratyphoid *B* fever, III, 706.  
of peritonitis, III, 335.  
of pneumococcus-infected mice in varying oxygen atmospheres, III, 335.  
protective activity of sera in, III, 838.  
of pneumonia, III, 46, 410, 477, 478, 919.  
in children, III, 47, 410.
- Sulphapyridine, treatment with, of pneumonia, in old age, III, 477.  
toxic effect of, III, 546.  
of Ritter's disease, III, 919.  
of sepsis, III, 628.  
of streptococcal infections, III, 544.  
of trichinosis, III, 479.
- Sulphapyrimidine, III, 410, 920.  
activity of, against *E. coli*, compared with other sulphonamides, III, 47.  
bacteriostatic and bactericidal action of, on Gram-negative bacteria, III, 48.  
clinical and pharmacological values of, III, 920.  
crystalluria due to, III, 260.  
detection and determination of, II, 388.  
effect of, on *Staphylococcus aureus*, compared with sulphathiazole, III, 544.  
intracranial use of, III, 546.  
lesions produced by, III, 840.  
leukamoid reaction to, III, 921.  
sodium derivative, clinical and pharmacological value of, III, 920.  
treatment with, of pneumonia, intravenously, III, 626.  
of streptococcal infection, III, 839.  
treatment with, anuria after, III, 162.  
of Addison's disease with meningitis, III, 920.  
of bacterial infections, III, 410.  
of malaria, III, 479.  
of meningitis, III, 705, 920.  
of murine pertussis, III, 628.  
of pneumonia, III, 410, 477, 853.  
urolithiasis medicamentosa due to, III, 546.
- Sulphates. See under Sulphur.
- Sulphathiazole, absorption of, from gastrointestinal tract, pleura, and peritoneum in dogs, III, 478.  
activity of, against *E. coli*, compared with other sulphonamides, III, 47.  
agranulocytosis due to, III, 707, 921.  
anemia due to, III, 707, 921.  
application of, to brain, epilepsy after, III, 806.  
as antimalarial, III, 410.  
bactericidal effect of, on *E. coli*, III, 917.  
on *Streptococcus faecalis*, III, 839.  
bacteriostatic effect of, in ointment bases, III, 837.  
crystals, detection of, in urine, III, 477.  
crystalluria due to, III, 260.  
dermatitis due to, III, 480.  
detection and determination of, II, 388.  
determination of, III, 335, 916.  
and its distribution in blood, III, 704.  
diffusion of, into and from peritoneum, III, 704.  
effect of, on *C. diphtheriae*, III, 545.  
on gonococci *in vitro*, III, 478.  
on monkeys, III, 336.  
on pneumococci, III, 478.  
on sputum in pneumonia, III, 627.  
on *Staphylococcus aureus*, compared with sulphadiazine, III, 544.  
free, precipitation of, in urinary tract, after dosage, III, 260.  
in blood-serum, fibroblast growth in, III, 918.  
mastoid wound closure with, III, 839.  
ointment of, treatment with, of impetigo, III, 767.  
pathological tissue changes produced by, in rabbits, III, 767.  
renal damage after, III, 921.  
prevention of, by sodium bicarbonate, III, 336.  
snuff, treatment with, of diphtheria carriers, III, 336.  
sodium, in urology, III, 161.  
therapeutic range of, III, 917.  
tolerance to large dose of, III, 921.  
toxicity of, chills and fever as manifestation of, III, 48.  
treatment with, III, 546.  
anemia, autoagglutination, hepatitis, and renal damage after, III, 840.  
of agranulocytosis, III, 797.  
of cavernous sinus thrombosis, III, 544.  
of coryza in fowls, III, 840.



Sulphathiazole, treatment with, of decubitus ulcers, III, 480.  
 of dermatoses, III, 545.  
 of diarrhoea, III, 480, 706.  
 of endocarditis, III, 410.  
 of febrile reactions after operations, III, 918.  
 of gonorrhoea, III, 161, 706, 920.  
 of gonorrhoeal urethritis, III, 259.  
 of impetigo, III, 628, 919.  
 of lung infections, III, 410.  
 of meningitis, III, 410.  
 of mononucleosis, III, 707.  
 of osteomyelitis, III, 706, 919.  
 of pneumonia, III, 477, 478, 853, 919.  
 of pyogenic cutaneous infections, III, 411.  
 of septicæmia, III, 706, 768, 838.  
 of urinary tract infections, III, 546.  
 urinary suppression due to, III, 921.  
 Sulphathiazoles, substituted at nitrogen, II, 208.  
 Sulphathiazoline, II, 120.  
 and its *N*-acetyl derivative, II, 153.  
 pathological tissue changes produced by, in rabbits, III, 767.  
 Sulphatopentaminocobaltic sulphate, equilibrium of, with aquopentaminocobaltic sulphate, I, 401.  
 Sulphides, chemistry of, I, 374.  
 determination of, by electrometric titration, I, 339.  
 luminescence of, I, 42.  
 occurrence of, in coal seams, I, 76.  
 ore-forming, equilibria in, I, 329.  
 organic, reactions of, II, 344.  
 Sulphides, effect of hydrocyanic acid on, II, 2.  
 Sulphites. See under Sulphur.  
 Sulphite-pulp, waste liquors from, lignosulphonate decomposition in, III, 343.  
 Sulpho-2-amino-7-naphthoic acid, and its barium salt, II, 226.  
 5-Sulphobenzoic acid, 3-amino-, and 3-nitro-, salts and derivatives, II, 197.  
 5-Sulphobenzoyl chloride, 3-nitro-, and its derivatives, II, 197.  
 2'-3'-Sulphobenzoyloxynaphthalene-1-azo-1'-benzene-4-azo-4'-2"-methoxy-5"-methylbenzene-1"-azo-1"-2"-3"-sulphobenzoyloxy)naphthalene, disodium salt, II, 196.  
 Sulphocarboxylic acids, II, 197.  
 Sulpho-compounds, spectra of, absorption, I, 385.  
 4-Sulphodiphenyl-4-arsinic acid, and its salts, II, 158.  
 Sulpho-groups, introduction of, into aliphatic compounds, II, 391.  
 Sulphonamides, II, 8, 307.  
 absorption rate of, after application, III, 918.  
 action of, III, 704.  
 in compound fractures, III, 546.  
 mechanism of, III, 837.  
 on *Bacillus diphtheriæ* infections in guinea-pigs, III, 545.  
 on *Bacillus typhosus* infections, III, 545.  
 on bacterial cells, III, 625.  
 on *M. lysodeikticus* and lytic and bactericidal activities of lysozyme, III, 545.  
 on pneumococci, III, 705.  
 on pneumococci, staphylococci, streptococci, and Friedländer's bacillus, III, 543.  
 on renal secretion, III, 479.  
 on staphylocoagulase, III, 837.  
 on staphylococcus growth, III, 48, 543, 837.  
 on streptococcal antifibrinolysin test, III, 918.  
 on *Streptococcus viridans* infections, III, 159.  
 on *Vibrio cholerae*, III, 768.  
 anemia due to, III, 162.  
 antagonism between methionine and, on *Escherichia coli*, III, 477.  
 antimalarial action of, inhibition of, by *p*-aminobenzoic acid, III, 838.  
 bacteriostatic effect of, analysis of, III, 705.  
 enhanced by urea, III, 938.  
 failure of growth factors to inhibit, III, 625.  
 in *C. diphtheriæ* infections, III, 161.  
 on growth of *Streptococcus viridans*, III, 625.  
 binding of, by plasma-proteins, III, 705.  
 common, III, 410.  
 concentration of, test for, III, 259.

Sulphonamides, determination of, III, 916.  
 in blood, III, 704, 917.  
 detoxication of, prophylactic and therapeutic, III, 768.  
 diffusion rate of, I, 16; III, 625.  
 granulocytopenia due to, III, 162.  
 in acute rheumatism, III, 707.  
 in faeces, III, 840.  
 inhibitory action of, III, 715.  
 on bacterial luminescence, III, 545.  
 inhibition of, by various media, III, 48.  
 ionisation of, III, 837.  
 long-chain, therapeutic properties of, II, 307.  
 media for study of, III, 837.  
 melana due to, III, 260.  
 myocarditis produced by, in mice and rats, III, 480.  
 non-permeability of blood clot to, at increased temperatures, III, 837.  
 non-specificity of, III, 837.  
 penetration of, through skin, by iontophoresis, III, 837.  
 phytopharmacological reactions of blood after, III, 838.  
 pneumococcal resistance to, III, 918.  
 powdered, peritoneal response to, III, 160.  
 protection by, against carbon tetrachloride poisoning, III, 545.  
 sterilisation and thermostability of, III, 916.  
 substituted, chemotherapeutic activity of, III, 409.  
 preparation of, II, 138.  
 synergistic action of, on pathogenic micro-organisms, III, 626.  
 toxicity of, to cells, III, 260.  
 treatment with, III, 410.  
 blood diseases due to, III, 162.  
 morphology of urinary crystals during, III, 840.  
 of asthma, III, 336, 479.  
 of cerebrospinal fever, III, 545.  
 of cerebrospinal meningitis, in Sudan, III, 161.  
 of chancre, III, 707.  
 of conjunctivitis, III, 259.  
 of dermatitis, III, 706.  
 of endocarditis, III, 160, 410, 663, 767, 839, 919.  
 of erysipelas, III, 707.  
 of impetigo, III, 919.  
 of lymphogranuloma venereum, III, 545, 707.  
 of malaria in ducks, III, 545, 768.  
 of mastoiditis, III, 480.  
 of meningitis, III, 335, 410, 544, 705, 838, 918.  
 in Ottawa, III, 410.  
 of meningitis and pneumonia, III, 544.  
 of meningitis and septicæmia, III, 47.  
 of meningococcal infection, III, 839.  
 of meningopneumonitis and pneumonitis, III, 707.  
 of pneumonia, in children, III, 477.  
 of septicæmia, III, 411, 544.  
 of *Shigella paradysenteriæ* in mice, III, 627.  
 of skin diseases, III, 919.  
 of syphilitic keratitis, III, 706.  
 of urethritis, III, 768.  
 of tuberculosis, III, 628.  
 urinary tract in, III, 336.  
 o-Sulphonamidobenzsemicarbazide, II, 335.  
 p-Sulphonamidophenylarsinic acids, derivatives of, II, 386.  
 Sulphonamidotetrazolium salts, action of, on glycolysis by lactic bacteria, II, 289.  
 Sulphonation, II, 262.  
 Sulphones, action of, on tuberculosis, III, 628.  
 Sulphonophthalein dyes, carbinol formation in, I, 104.  
 Sulphonic acids, aromatic, as reagents for amino-acids, II, 189.  
 p-nitrobenzylpyridinium salts, II, 328.  
 Sulphophenylarsinic acids, and their derivatives, II, 158, 386.  
 Sulphosin, treatment with, of psychoses, III, 48.  
 Sulphosuccinic acid, alkyl esters, conductivity of solutions of, I, 362.

Sulphoxides, condensation of, with substituted acetamides and *p*-toluenesulphonamide, II, 128.  
 Sulphur, action of, on hydrocarbons at high pressure, II, 125.  
 colloidal, hydration of, I, 203.  
 crystals, atomic arrangement in, I, 199.  
 dehydrogenation with, II, 341.  
 isotopes, radioactive, production and isotopic assignment of, I, 33.  
 isotopic weights of, I, 78.  
 metabolism of. See under Metabolism.  
 nuclear photo-effect on, I, 128.  
 L-rays from, I, 29.  
 sulphide, radioactive, conversion of, into cysteine-sulphur, III, 776.  
 vapour, mol. wt. of, I, 167.  
 Sulphur compounds, II, 284.  
 aromatic, bacteriostatic action of, relation of chemical structure to, III, 476.  
 content of, in animal tissues, III, 395.  
 Sulphur dichloride, hydrolysis of, I, 369.  
 chlorides, preparation of, from calcium sulphate, I, 374.  
 pentafluoride, dielectric constant of, I, 165.  
 monoxide, I, 111.  
 equilibrium of, with sulphur and sulphur dioxide, I, 328.  
 spectrum of, absorption, I, 313.  
 dioxide, action of, with chlorine on aliphatic hydrocarbons, II, 296.  
 compound of, with aluminium chloride, I, 314.  
 determination of, with iodine solution, I, 339.  
 fluctuation of, in atmosphere, I, 120.  
 gastric ulcer after exposure to, III, 691.  
 liquid, reactions in, II, 354.  
 molecular surface energy of organic addition compounds of, I, 134.  
 oxidation of, catalytically, I, 270.  
 reaction of, with nitrogen tetroxide, I, 207.  
 with olefines, non-peroxide catalysts for, I, 301.  
 with sodium thiosulphate, I, 373.  
 reduction of, at dropping mercury cathode, I, 65.  
 solubility of, nomograph for, I, 54.  
 specific heat of, I, 232.  
 trioxide, chemistry of, I, 373.  
 heat of solution of, in water, I, 330.  
 isotherms of, with water and sodium or potassium oxides, I, 63.  
 vapour pressure of, mixed with chlorosulphonic acid, I, 358.  
 Sulphuric acid, analysis of, I, 407.  
 enthalpy-temperature nomograph for mixtures of, with nitric acid, I, 368.  
 molal volumes of aqueous solutions of, I, 393.  
 X-ray diffraction by, I, 234.  
 substituted derivatives, spectra of, Raman, I, 133.  
 transference numbers of, in anhydrous methyl alcohol, I, 64.  
 Sulphates, determination of, III, 564.  
 in coloured effluents, etc., I, 184.  
 volumetrically, I, 339, 407.  
 of metals of magnesium series, I, 328.  
 bivalent, heat contents of, in dilute aqueous solutions, I, 100.  
 Sulphurous acid, detection of, colorimetrically, II, 159.  
 Sulphites, detection of carbon and sulphur dioxides from mixtures of, with carbonates, I, 113.  
 determination of, in mixtures with thiosulphates, I, 153.  
 oxidimetrically, I, 407.  
 oxidation of, I, 103.  
 reaction of, with hydrogen sulphide, I, 210.  
 Hyposulphites, thermodynamic constants of, I, 240.  
 Persulphates, detection of, with luminol, I, 277.  
 photolysis of, I, 303.  
 reaction of, with iodides, I, 103, 106.

- Sulphur** :—  
 Thiosulphates, determination of, in mixtures with sulphites, I, 153.  
 in presence of sulphites, I, 182.  
 oxidimetrically, I, 407.  
 spectra of, absorption, infra-red, I, 288.  
 Dithionates, determination of, oxidimetrically, I, 375.  
 Tetrathionates, reduction of, by bacteria, III, 783.  
 Polythionic acids, natural occurrence of, I, 76.  
 Polythionates, determination of, oxidimetrically, I, 407.  
 Sulphur organic compounds, II, 172.  
 in prevention of caecal coccidiosis in chickens, III, 631.  
 Sulphuric acid, esters, aromatic, preparation of, II, 139.  
**Sulphur determination** :—  
 determination of, I, 375.  
 in organic compounds, II, 276.  
 in organic substances, II, 159.  
 microchemically, I, 276.  
 Sulphur-hydrogen linkings, I, 196.  
 Sulphur soap. See under Soaps.  
 Sulphuric acid. See under Sulphur.  
 Sulphurous acid. See under Sulphur.  
 Sulphuryl chloride, hydrolysis of, I, 369.  
 reaction of, with naphthol derivatives, II, 282.  
 Sumatrol, m.p. of, II, 111.  
**Sun**, absorption markings of hydrogen seen on, I, 309.  
 atmosphere of, motion of gases in, I, 37.  
 corona of, I, 253.  
 due to Stark effect in helium, I, 309.  
 eclipse of, ionospheric study of, on 1st October 1940, I, 286.  
 spectrography of, I, 309.  
 energy of, source of, I, 311.  
 hydrogen convection zone of, I, 311.  
 hydrogen in, I, 221.  
 internal temperature of, I, 256.  
 iron in, I, 309.  
 kinetic temperature of reversing layer of, I, 190.  
 spectrum of, infra-red, I, 224, 254.  
 ultra-violet radiation from, I, 310.  
 in high latitudes, I, 257.  
**Sunflowers**, seedlings, respiration of, III, 276.  
**Sunlight**, cure and prevention of rickets by, in Arizona, III, 833.  
 ointments for protection against, bases in, III, 712.  
**Superconduction**, sound emission in transition from normal to, I, 320.  
**Superconductors**, I, 320.  
 attenuated, I, 377.  
 gyromagnetic effect in, I, 13.  
**Superfotetation** in mouse, III, 187.  
**Superfluids**, in condensed monolayers, I, 295.  
 in two dimensions, I, 325.  
**Supermolecules**, formation of, at interfaces, I, 142.  
 orientation polarisation and formation of, I, 133.  
**Supersaturation**, dilatometry of, I, 358.  
**Supersonics**. See Waves, supersonic.  
**Suppositories**, containing local anæsthetic and sulphanilamide, treatment with, of anorectal infections, III, 839.  
 oestrogenic, vaginal, treatment with, of vaginitis, III, 601.  
**Suramin**. See Bayer 205.  
**Surfaces**, chemistry of, in biology, III, 487.  
 formulae for reactions at, I, 301.  
 friction of, effect of adsorbed films on, I, 264.  
 of solutions, structure of, I, 171.  
**Surface area**, logarithmic table for calculating, III, 656.  
 of microporous solids, calculation of, I, 171.  
**Surface energy** in liquid-solid systems, I, 360.  
**Surface tension**, measurement of, by drop wt. method, I, 264.  
 by rotating bubble method, I, 159.  
 device for, I, 75.  
 hydrometer float for, I, 214.  
 molecular dimensions and, I, 85.  
**Surface tension**, of liquids, I, 360.  
 and coefficient of compressibility, I, 10.  
 and co-ordination numbers, I, 396.  
 and viscosity, I, 357.  
 effect of temperature on, I, 10.  
 of micelle-forming solutions, I, 264.  
 of solutions of electrolytes, I, 142.  
 refractive index and, I, 134.  
 separation methods based on, I, 360.  
**Surface-tension depressants**, effect of, in serology, III, 368.  
**Surgery**, anoxia in, III, 101.  
 barbiturates in, III, 549.  
 nutrition and, III, 467.  
 plastic, infection of wounds in, by *Streptococcus pyogenes*, III, 495.  
 reflecting screen for use in, III, 487.  
 thoracic, evipan anæsthesia in, III, 166.  
 vitamins in, III, 538.  
**Surgical instruments**, sterilisation of, III, 260.  
**Surra**, treatment of, in horses in the Philippines, III, 54.  
**Suspensions**, colloidal. See Colloidal suspensions.  
**Swayback**, in lambs, in relation to Schilder's encephalitis and its prevention by copper, III, 586.  
**Sweat**, indicator for, III, 563.  
 insensible, in old age, III, 408.  
 response of, to nicotine-like drugs, III, 50.  
 secretion of, and its fat content, at high temperatures, III, 485.  
 disturbances in, after peripheral nerve lesions, III, 586.  
 in new-born, III, 34.  
**Sweating**, due to pilocarpine, test with, III, 221.  
 effect on, of anæsthesia and sympathectomy in man, III, 821.  
**Swimming**, position control in, by mechanical factors and proprioception, III, 584.  
**Swine**, effect on, of pituitary growth hormone, III, 522.  
 hæmophilia-like disease in, III, 369.  
 See also Pigs.  
**Swine fever**, virus, cultivation of, III, 856.  
**Sylvanite**, atomic arrangement in, I, 218.  
**Sylvine**, spectrum of, secondary X-ray, I, 290.  
 use of, in optics, I, 342.  
**Sylvite**. See Sylvine.  
**Sympathectomy**, III, 741.  
 paravertebral, and neurogenic hypertension, body fluid changes in, III, 670.  
 preganglionic and postganglionic, differentiation of, indicator for, III, 221.  
 temperature sensation in, III, 377.  
 treatment with, of vascular disease, III, 204.  
**Sympathol**, glycæmic action of, effect of X-rays on, III, 708.  
**Sympathomimetics**, II, 57.  
 synthesis of, II, 114.  
*Symphoricarpus rotundifolius*, constituents of, III, 948.  
**Synephrin**, tartrate, cardio-circulatory effect of, in man, III, 548.  
**Synovial fluid**, abnormalities in, due to infection and oedema, III, 146.  
**Synovial fossæ**, in man, ruminants, and horse, III, 185.  
**Synovial membrane**. See under Membranes.  
**Syphilis**, aortic insufficiency in, III, 13, 440.  
 aortitis in, diagnosis of, III, 440.  
 chronic, diagnosis of, serology of, III, 350.  
 congenital, III, 783.  
 hæmorrhagic diathesis in, fibrinasthenia as cause of, III, 195.  
 diagnosis of, antigen-mastic used in, III, 350.  
 false positive reactions in, III, 648.  
 serologically, III, 783.  
 tests for, III, 67, 560.  
 Kahn, III, 349.  
 Kolmer complement fixation, III, 648.  
 Laughlen, III, 350, 560.  
 serological, III, 273.  
 after malaria inoculation, III, 349.  
 Wassermann, egg-albumin-complement mixtures for, III, 560.  
 with gold sols, III, 423.  
 immunity in, III, 719.  
 influence of, in cancer of cervix, III, 536.  
**Syphilis of duodenum**. See under Duodenum.  
 pulmonary artery aneurysm and lung fibrosis due to, III, 802.  
 resistance to, after bilateral orchidectomy, III, 559.  
 spirochaetes of, viability of, in desiccated blood-serum, III, 67.  
 transfusion, prevention of, III, 194.  
 treatment of, with arsenic, III, 551, 634, 711, 843, 925.  
 with bismuth ethyl camphorate, III, 843.  
 with clorarsen, III, 483.  
 with mapharsen, III, 551.  
 with neosalvarsan during pregnancy, encephalitis from, III, 925.  
 with tryparsamide, gastritis after, III, 843.  
**Syringes**, automatic valves for, I, 281.  
**Syringomyelia**, and cranial deformity, III, 882.  
 in twins, III, 211.  
 of spinal cord, III, 363.  
**Syringoyl methyl ketone**, and its derivatives, II, 42.  
**Systems**, binary, graph for, I, 233.  
 statistical mechanics of, I, 293.  
 theory of, I, 365.  
 conjugated, II, 261.  
 disperse, solvation in, I, 20.  
 nearest neighbour, statistical mechanics of, I, 10.  
 quinary, representation of, as projections of regular figures, I, 63.  
 solid, disperse structure of, I, 291, 368.  
 ternary, determination of composition of, I, 358.  
 phase models for, I, 343.  

T.

**T.N.T.**, derivative of, in urine, test for, III, 415.  
 poisoning by. See under Poisoning.  
**Tabes**, bladder difficulties in, transurethral resection of vesical neck for, III, 676.  
**Tablets**, briquetted, spectrographic analysis of, I, 117.  
**Taboparesis**, sympathetic stimulation in, ocular signs in, III, 218.  
**Tachycardia**, adrenalin-cyclopropane, rôle of thyroid in, III, 807.  
 blood volume of, effect of posture on, III, 10.  
 diagnosis and treatment of, III, 578.  
 in familial food allergy, III, 356.  
 paroxysmal, in childhood, III, 202.  
 of supraventricular origin, III, 877.  
 treatment of, with apomorphine, III, 371.  
 persistent, and pulse-temperature disproportion, in relation to myocardial lesions, III, 801.  
 physiological, in young, III, 202.  
 supraventricular, in infancy, III, 439.  
**Tadpoles**, iodine- and thyroxine-treated, effects of  $p_{\text{H}}$  on metamorphic pattern of, III, 593.  
 pars intermedia of, growth and activity control of, by hypothalamus, III, 231.  
*Tagetes erecta*, glucoside from, II, 48.  
*Tagetes patula*, flowers, colouring matter from, II, 202.  
**Tail**, reflexes of, in lizards, III, 881.  
**Takata-Ara reaction**, diagnostic value of, III, 693.  
 in cerebrospinal fluid in internal diseases, III, 111.  
**Talc industry**, pneumoconiosis in, III, 929.  
**Talipes clavus**, neurogenous, genetics of, III, 363.  
**Tamarinds**, bacillus from, III, 718.  
*Tanghinia venenifera*, constituents of kernels of, II, 242.  
 $\psi$ -Tanghinin, and its diacetate, II, 242.  
**Tanneries**, dermatitis in, III, 485, 638.  
**Tannins**, natural, constituents of, II, 284.  
 stabilisation by, of graphite suspensions, I, 361.  
**Tanshinone**, constitution of, and its derivatives, II, 375.  
**Tantalum**, polycrystalline, electrical resistance of, I, 13.  
 spectra of, absorption and emission, I, 285.

- Tantalum**, superconductive, specific heat of, I, 14.  
superconductivity of, I, 13.  
temperature scale, thermionics, and thermionics of, I, 285.  
thermal expansion of, I, 167.  
**Tantalum tribromide**, anhydrous, I, 406.  
phosphides, I, 275, 329.  
disilicide, crystal structure of, I, 390.  
**Tantalum organic compounds**, II, 210.  
**Tantalum detection** :—  
detection of, I, 279.  
**Tantalum ores**, containing niobium, of W. Australia, I, 122.  
**Tape**, adhesive, dermatitis due to, III, 858.  
irritation caused by, III, 275.  
**Tapeworms**. See under Worms.  
**Tar**, beech wood, benzofurans in, II, 374.  
from foods, tumour production by, III, 463.  
**Tar paper**, dermatitis caused by storage bags of, III, 638.  
**Tartaric acid**, complexes of copper and alkali metals with, I, 40.  
complexes of metatungstic acid and, I, 305.  
photochemical activity of, mixed with vanadic acid, I, 244, 273.  
reduction of, II, 75.  
**Tartaric acid**, calcium salt, from *d*-tartaric acid, II, 216.  
sodium salt, cathartic efficiency and toxicity of, in mice and rabbits, III, 631.  
sodium thorium salt, pharmacology of, and its use in X-ray diagnosis, III, 932.  
**d-Tartaric acid**, anomalous crystal photo-effect in, I, 42.  
**Taste**, sense of, III, 673.  
**Tatera**. See Gerbils, South African.  
**ζ Tauri**, spectrum of, I, 222.  
**Tea**, Ceylon, fermentation of, III, 276.  
fermentation of, III, 359.  
leaves, as maintenance food for animals, III, 826.  
production of, fermentation in, III, 264.  
**Teeth**, abrasion and cervical exposure in, in relation to age in man, III, 695.  
development of, phosphatase distribution in, histochemistry of, III, 793.  
disturbances with gum inflammation in, treatment of, with ascorbic acid, III, 911.  
effect on, of calcium- and vitamin-D-deficient diet, in rats, III, 913.  
extraction of, wounds from, treatment of, with ascorbic acid, III, 472.  
first, factors affecting, III, 618.  
incisor, appositional growth pattern of, III, 2.  
changes in, in vitamin-D deficient rats, III, 79.  
enamel organ atrophy of, in vitamin-E deficiency in rats, III, 764.  
eruption of, effect of magnesium deficiency on, in rats, III, 828.  
eruption and dentine in, effect of hibernation on, in squirrels, III, 79.  
molar, evolution of, in mammals, III, 2.  
mottled, incidence of, III, 900.  
phosphorescence of, in man, III, 695.  
silver nitrate diffusion in, III, 462.  
structure changes in, in rats on vitamin-D deficient diet, III, 328.  
structure of, effect of orange juice on calcium utilisation in relation to, III, 911.  
substance of, apatite and apatite-like constituent of, X-ray diffraction of, III, 900.  
**Tegenaria atrica**, moult cycle and integument of, III, 822.  
**Telangiectasia**, haemorrhagic, hereditary, with gastro-intestinal bleeding, III, 242.  
naevus-araneus-like, erythema palmare and, III, 205.  
**Telencephalon**, basal, stimulation of, pupillary and other responses from, III, 742.  
**Telescopio systems**, performance of, at low luminosity, I, 377.  
**Tellurium**, allotropes of, I, 12.  
colloidal, I, 56.  
X-rays from, I, 381.  
**Tellurium compounds**, bacteriostatic action of, relation of chemical structure to, III, 476.  
**Tellurium hexafluoride**, dielectric constant of, I, 165.  
**Tellurium determination** :—  
determination of, in iron, I, 153.  
**Temperature**, biological effects of, III, 555.  
body, control of, vasomotor reflexes in, in man, III, 204.  
regulating centre of, puncture technique of, III, 303.  
See also Homeothermy.  
chemical regulation of, III, 415.  
concept of, I, 353.  
critical, measurement of, by rotating bomb, I, 249.  
relation of, to b.p., I, 357.  
variation of, with b.p., I, 228.  
lethal limits of, for goldfish, III, 462.  
low, research at, I, 341.  
resistance to, effect of adrenal cortex and pituitary on, III, 746.  
nature of, I, 163.  
**Tendons**, transposed, re-coordination of leg movements with, III, 376.  
**Tenthredinidae**, diapause among, III, 323.  
**Teratoma**, of spinal cord, III, 363.  
twins in relation to, III, 403.  
**Terphenylic acid**, 2:3- and 2:5-dinitro-, dimethyl esters, II, 359.  
**Termites**, symbiotic amoeba and, metabolic relations in, III, 696.  
**Terpenes**, chemistry of, II, 417.  
fractionation of, distillation columns for, II, 340.  
optical activity of, I, 228 ; II, 369.  
**Terpene group**, syntheses in, II, 286.  
**Terpenoid compounds**, spectra of, absorption, I, 164 ; II, 106, 415.  
**o-Terphenyl**, II, 355.  
**Terpinyl esters**, determination of, II, 292.  
**Terrapin**, Indian pond. See *Lissemys punctata punctata*.  
**Tests**, spot, use of infra-red rays in, I, 280.  
**Testes**. See Testicles.  
**Testicles**, atrophy of, prevention of, by steroids, III, 605.  
treatment of, with hormones, III, 127.  
changes in, due to oestrogens, in relation to syphilis resistance, III, 130.  
incident to cryptorchidism, effect of urinary extracts on, III, 134.  
deficiency of, treatment of, with methyl-testosterone, III, 128.  
degeneration of, stilboestrol-induced, in hypersexual males, III, 602.  
effect on, of pituitary and chorionic gonadotropin, in roosters, III, 238.  
extracts, β-glucosaminase in diffusing factor from, III, 58.  
germinal epithelium of, atrophy of, induced by X-rays, in rabbits, III, 391.  
hormones from, aqueous, effect of injection of, III, 127.  
oestrogenic, III, 601.  
metabolism of, effect of gonadotropic hormone on, III, 522.  
reduction of silver nitrate by, in adrenalectomised rats, III, 695.  
response of, to androgens, III, 815.  
after hypophysectomy, III, 893.  
Reynolds diffusion factor of, physiology of, III, 668.  
tumours of, induction of, by stilboestrol-cholesterol pellets in mice, III, 148.  
effect of foster nursing on, in stilboestrol-injected mice, III, 823.  
malignant, III, 616.  
pathology of, III, 126.  
tumours of interstitial cells of, treatment of, with triphenylethylene, III, 615.  
undescended, histology of, after puberty, III, 391.  
treatment of, hormonal and surgical, III, 893.  
with gonadotropic hormone, III, 29.  
**Testosterone**, and its propionate, potency of, III, 240.  
compounds of, implantation of, in eunuchoidism, III, 127, 605.  
**Testosterone**, determination of, colorimetrically, III, 239.  
effect of, on immature gonad response to gonadotropin, III, 127.  
on morphogenetic action of oestradiol, III, 605.  
effectiveness of conditions modifying, III, 752.  
in mammary carcinoma, III, 401.  
pellets of, implantation of, III, 390.  
production of epithelial growths in human cervical mucosa by, III, 386.  
propionate, absorption rate and mammary stimulation by, in rats, III, 752.  
anti-tumoral action of, III, 465.  
effect of, in spayed female rats, III, 752.  
on adrenal mitotic activity, in immature female rats, III, 128.  
on arginase in intestine, kidney, and liver, III, 777.  
on atherosclerosis in rabbits, III, 441.  
on bone growth and skeletal development in normal and castrated rats, III, 128.  
on Bowman's capsule and renal cortex, in mice, III, 126.  
on excretion rate of urinary androgens, III, 315.  
on lactation, III, 455, 526.  
on mammary gland, postpartum, III, 751.  
on mammary tumours in mice, III, 400.  
on mating behaviour of rats, III, 128.  
on organs of immature rats, III, 240.  
on organ and body weights of female rats, effect of oestrous cycle on, III, 752.  
on perineal musculature after castration in rats, III, 376.  
on subcutaneous corn oil, III, 815.  
effectiveness of, conditions modifying, III, 752.  
in gynaecology, III, 815.  
treatment with, heat output in hypogonadism during, III, 606.  
of acne vulgaris, III, 315.  
of anogenital pruritus in climacteric, III, 690.  
of Cushing's syndrome, III, 452.  
of gigantism, III, 239.  
of hypogonadism, III, 127.  
of impotence, III, 390.  
of menometrorrhagia, III, 605.  
of mercurichloride poisoning, III, 635.  
of postclimacteric dermatoses, III, 605.  
of pruritus, III, 815.  
of psychotics, III, 128.  
treatment with, of impotence, III, 606.  
**Tetanus**, antitoxin, effect of, after immunisation, III, 942.  
antitoxin, III, 273.  
prophylaxis with, trigeminal neuralgia after, III, 560.  
bacilli of. See under Bacilli.  
immunisation against, III, 350, 560.  
and against diphtheria and pertussis, III, 781.  
with alum toxoid, III, 781.  
prevention and treatment of, III, 67.  
prophylaxis of, with bovine antitoxin, III, 67.  
spinal roots in, rôle of, III, 20.  
toxin, killing by, of *Rotifer vulgaris*, III, 67.  
toxoid, alum-precipitated, sensitisation by, III, 351.  
purification of, III, 854.  
treatment of, III, 633.  
vaccination against, of Swiss soldiers, III, 560.  
**Tetany**, after lactation on deficient diet, III, 467.  
infantile, treatment of, with dihydrotachysterol, III, 521.  
of newborn, III, 684.  
parathyroid, serum-calcium and -inorganic phosphorus in, III, 306.  
treatment of, with sterols and calcium salts, III, 685.  
parathyroprivic, treatment of, dihydrotachysterol in, III, 521.  
treatment of, with A.T. 10, mineral metabolism in, III, 118.  
with normal blood-calcium, III, 665.

- 4-2':3':4':6'-Tetra-acetyl- $\beta$ -glucosido-*D*-mannosan, II, 80.  
 Tetra-alkylhydrazines, preparation of, II, 4.  
 Tetra-anisylallene, II, 194.  
 $\alpha\alpha\gamma\gamma$ -Tetra-anisylvinylcarbenium perchlorate, II, 194.  
 1:2:4:5:6:7:9:10-Tetrabenzopyrene-3:8-quinone. See Ixone.  
 $\alpha\alpha\beta\beta$ -Tetra-5-carbethoxy-2:4-dimethyl-3-pyrrol-ethane, II, 380.  
 Tetracarboxyellagic acid, disodium salt, II, 260.  
 3:5:3':5'-Tetracarboxy-1:4:1':4'-tetramethyl-dipyrrolylmethane, II, 381.  
 3:5:3':5'-Tetracarboxy-1:4:4'-trimethyl-dipyrrolylmethane, II, 381.  
 Tetradecehexenal, II, 163.  
 Tetradecehydroacridine, and its hydrochloride, II, 116.  
 Tetradecehydrochrysene-1:2:7:8-tetracarboxylic acid, anhydride, II, 143.  
 Tetradece- $\beta$ -dione, II, 300.  
 Tetradece- $\beta$ - $\kappa$ -tetraone, II, 300.  
*n*-Tetradece- $\delta$ -ol,  $\gamma$ -nitro-, II, 293.  
*n*-Tetradece- $\epsilon$ -ol, II, 127.  
*n*-Tetradece- $\epsilon$ -one, II, 127.  
 Tetradeceic acid,  $\nu$ -bromo-, and  $\nu$ -iodo-, and their methyl esters, II, 344.  
 $\alpha$ -hydroxy-,  $p$ -bromophenacyl,  $p$ -nitrobenzyl, and phenacyl esters, II, 74.  
 Tetradeceylamine, hydrochloride, electrical conductivity of aqueous solutions of, I, 299.  
 1-Tetradeceylpicolinium halides, II, 203.  
 1-Tetradeceylpyridinium bromide, II, 203.  
*n*-Tetradeceylsuccinic acid, and its derivatives, II, 278.  
 Tetrauterammonium bromide, hysteresis in volume-temperature curve of, I, 321.  
 Tetrauterethylene, spectrum of, absorption, infra-red, I, 193.  
 2:3:5:6-Tetrauterobenzhydrylamine, 4:4'-dibromo-, and its attempted resolution, II, 253.  
 2:3:5:6-Tetrauterobenzophenone, 4:4'-dibromo-, II, 253.  
 Tetrauteromethane, m.p.-pressure curve of, I, 89.  
 Tetrauterothiophen, II, 62.  
 2:5:2':5'-Tetraethyl-3:3'-dithienyl, II, 62.  
 Tetragalloylallagic acid, II, 260.  
 1':2':3':4'-Tetrahydro-1:2-benzanthracene-1'-acetic acid, 1'-hydroxy-, methyl ester, II, 7.  
 1':2':3':4'-Tetrahydro-1:2-benzanthryl-1'-acetic acid, and its methyl ester, II, 8.  
 1:2:3:4-Tetrahydrobenzene, derivatives of, II, 23.  
 1':2':3':4'-Tetrahydro-3:4-benzpyrene, 4'-hydroxy-, 86.  
 1':2':3':4'-Tetrahydro-3:4-benzpyrenyl-4'-acetic acid, II, 86.  
 $\Delta^3$ -Tetrahydrobenzyl alcohol, and its  $p$ -nitrobenzoate, II, 407.  
 $\alpha$ - and  $\beta$ -3:5-14:21-Tetrahydrobufocholanic acids, II, 323.  
 $\alpha$ - and  $\beta$ -Tetrahydrobufotalins, II, 323.  
 Tetrahydrocannabinol, II, 110.  
 and its acetate, II, 179.  
 derivatives, with marihuana activity, II, 236.  
*d*-Tetrahydrocannabinol, and its *l*-menthoxy-acetate, II, 202.  
 3':4':5':6'-Tetrahydrocannabinol, derivatives of, II, 111.  
 Tetrahydrocholanthrene, 1-hydroxy-, II, 86.  
 Tetrahydrodeoxyisostychnine, and its perchlorate, II, 385.  
 3':4':5':6'-Tetrahydrodibenzopyran, derivatives, from pulegone-olivetol and pulegone-orceinol products, II, 202.  
 5:7:12:14-Tetrahydro-6:13-diphenylpentacene, II, 321.  
 1:2:3:4-Tetrahydro-17-equilenone, 6-hydroxy-, II, 230.  
 5:6:7:8-Tetrahydrofluoranthrene, dibromo-, II, 192.  
 Tetrahydrofuran, derivatives, II, 178.  
 Tetrahydrofurans, II, 107.  
 (-)-Tetrahydrofurfuryl alcohol, rotatory dispersion of, I, 388.  
 $\alpha$ -2-Tetrahydrofurfurylbutane,  $\gamma$ -chloro-, II, 178.  
 Tetrahydroirones, and their derivatives, I, 100.  
 Tetrahydronaphthalene, hydroperoxide, action of nitro-compounds and, on polymerisation of chloroprene, I, 106.  
 polymerides of, with polyvinyl chloride, I, 21.  
 1:2:3:4-Tetrahydronaphthalene-1:1'-spirocyclopentane, dehydrogenation of, II, 398.  
 Tetrahydronaphthyl methyl peroxide, II, 416.  
 Tetrahydronaphthyl *n*-heneicosyl ketone, II, 85.  
 $\epsilon$ -Tetrahydronaphthyl-*n*-hexacosane, II, 85.  
 $\epsilon$ -Tetrahydronaphthyl- $\Delta\epsilon$ -*n*-hexacosene, II, 85.  
 $\beta$ -Tetrahydronaphthyl- $\alpha$ -methylpropionic acid, and its derivatives, II, 7.  
*dl*-*N'*- $\alpha\epsilon$ -Tetrahydro- $\beta$ -naphthylsulphanilamide, and its derivatives, II, 51.  
 Tetrahydro-osajetin trimethyl ether, II, 243.  
 Tetrahydro-osajetinone trimethyl ether, and its oxime, II, 243.  
 Tetrahydro-osajylic acid dimethyl ether, II, 243.  
 1:2:3:4-Tetrahydro-2-phenanthrylacetic acid, and its methyl ester, II, 318.  
 Tetrahydropteriferin trimethyl ether, 2:3-epoxide, II, 179.  
 Tetrahydropteriferitin tetramethyl ether, II, 243.  
 Tetrahydropteriferitinone tetramethyl ether, II, 243.  
 5-4'-Tetrahydropyranyl-5-amylyldantoin, II, 419.  
 5-4'-Tetrahydropyranyl-5-butylldantoin, II, 419.  
 5-4'-Tetrahydropyranyl-5-ethylldantoin, II, 419.  
 5-4'-Tetrahydropyranyl-5-*n*-hexylldantoin, II, 419.  
 5-4'-Tetrahydropyranyl-5-cyclohexylldantoin, II, 419.  
 5-4'-Tetrahydropyranyl-5-methylldantoin, II, 419.  
 5-4'-Tetrahydropyranylphenylldantoin, II, 419.  
 5-4'-Tetrahydropyranyl-5-*n*-propylldantoin, II, 419.  
 Tetrahydropyretrosin, II, 137.  
 Tetrahydroquinoline, reaction of, with bromobenzylideneacetophenones, II, 149.  
 Tetrahydrosorcinol. See cycloHexanone, 3-hydroxy-.  
 Tetrahydrosarsapogenin, 23-hydroxy-, II, 265.  
 Tetrahydrothiopyran. See Pentamethylene sulphide.  
 1:2:3:4-Tetraketo-7-ethyl-1:2:3:4-tetrahydronaphthalene, 5:6:8-trihydroxy-, II, 319.  
 1:2:3:4-Tetraketo-tetrahydronaphthalene, 5:8-dihydroxy-, II, 319.  
 Tetrakisdimethylaminomethylmethane, and its salts and derivatives, II, 164.  
 Tetrakisfurfuraldoxime-nickel, II, 28.  
 Tetrakisfurfuraldoxime-palladium, II, 28.  
 Tetrakisfurfuraldoxime-platinum, II, 28.  
 Tetrakisdimethylaminomethylmethane, and its salts and derivatives, II, 164.  
 Tetralin. See Tetrahydronaphthalene.  
 3:4:5:6-Tetramethoxyacetophenone, 2-hydroxy-, II, 10.  
 1:2:3:5-Tetramethoxybenzene, preparation of, II, 10.  
 1:2:4:5-Tetramethoxybenzene, 3:6-dihydroxy-, diacetyl derivative, II, 10.  
 Tetramethoxy-*p*-benzoquinone, II, 10.  
 2:3:6:7-Tetramethoxy-9:10-diethylanthracene, II, 357.  
 2:3:6:7-Tetramethoxy-9:10-diethylanthracene, II, 357.  
 2:3:6:7-Tetramethoxy-9:10-dimethylanthracene, II, 357.  
 $\alpha\alpha$ -3:4:3':4'-Tetramethoxydiphenylpropane, II, 357.  
 3:4:3':4'-Tetramethoxystilbene,  $\alpha$ -cyano-, II, 257.  
*pp'*-Tetramethyldiaminodiphenylcarbamide, derivatives of, II, 254.  
*pp'*-Tetramethyldiaminodiphenylcarbodi-imide, and its derivatives, II, 254.  
*pp'*-Tetramethyldiaminodiphenylcarbodi-imides, metho-salts of, II, 254.  
 $\alpha\alpha$ -Tetramethyldiaminodiphenyl- $\gamma$ -diethylaminophenylallene, II, 194.  
 $\alpha\alpha$ -Tetramethyldiaminodiphenyl- $\gamma$ -diethylaminophenylvinylcarbenium perchlorate, II, 194.  
 Tetramethyldiaminodiphenylvinylxanthylum perchlorate, II, 194.  
 2:6:2':6'-Tetramethyl-*p*-anisil, II, 91.  
 1:3:9:10-Tetramethylanthracene, and its picrate, II, 229.  
 Tetramethylbenzaldehydes, and their derivatives, II, 15.  
 Tetramethylbenzenes, action on, of aluminium chloride, II, 136.  
 Tetramethylbenzenesulphonic acids, amides and chlorides of, II, 136.  
 2:6:2':6'-Tetramethylbenzil, 4:4'-dibromo-, and its oxime, II, 91.  
 2:6:2':6'-Tetramethylbenzoin, 4:4'-dibromo-, and its acetate, II, 91.  
 2:3:4:6-Tetramethylbenzyl chloride, II, 92.  
 2:3:5:6-Tetramethylbenzyl chloride, II, 92.  
 1(or 2):3:6:7(or 8)-Tetramethylbilitriene-4:5-dipropionic acid, 1':8'-dihydroxy-, dimethyl ester, II, 333.  
 $\beta\beta\gamma\gamma$ -Tetramethyl-*n*-butan- $\alpha$ -ol, and its derivatives, II, 70.  
 $\beta\beta\gamma\gamma$ -Tetramethyl-*n*-butyl bromide, chloride, and iodide, II, 70.  
 $\beta\beta\gamma\gamma$ -Tetramethyl-*n*-butylamine hydrochloride, II, 70.  
 $\beta\beta\gamma\gamma$ -Tetramethyl-*n*-butylcarbamide, II, 70.  
 5- $\alpha\alpha\gamma\gamma$ -Tetramethylbutyl-3-chloromethyl-2-quinonemethide, II, 317.  
 2:5:7:8-Tetramethyl-2-isobutylchroman, 6-hydroxy-, and its 3:5-dinitrophenylurethane, II, 235.  
 2:2:4:7-Tetramethyl-3-*n*-butyl- $\Delta^3$ -chromen, 5-hydroxy-, II, 111.  
 4- $\alpha\alpha\gamma\gamma$ -Tetramethylbutyl-2:6-di(chloromethyl)-phenol, II, 317.  
 $\beta\beta\zeta\zeta$ -Tetramethyl- $\delta$ -tert.-butyl- $\Delta\beta$ -*n*-heptene,  $\gamma$ -hydroxy-, benzoyl derivative, II, 349.  
 5- $\alpha\alpha\gamma\gamma$ -Tetramethyl-*n*-butylisophthalaldehyde, 2-hydroxy-, dioxime, II, 314.  
 $\alpha\alpha\beta\beta$ -Tetramethyl-*n*-butyric acid, and its amide, II, 70.  
 2:5:7:8-Tetramethylchroman, 6-hydroxy-, II, 235.  
 2:5:7:8-Tetramethylchroman-3-carboxylic acid, 6-hydroxy-, and its acetyl derivative, and their ethyl esters, II, 235.  
 2:6-dihydroxy-, 6-acetyl derivative, ethyl ester, II, 235.  
 2:5:7:8-Tetramethyl- $\gamma$ -chromene-3-carboxylic acid, 6-hydroxy-, and its acetyl derivative, and their ethyl esters, II, 235.  
 $\beta\beta\epsilon\epsilon$ -Tetramethyl- $\gamma\delta$ -di-tert.-butyl-*n*-hexane- $\gamma\delta$ -diol, II, 248.  
 2:2:5:5-Tetramethyl-1:3-dioxol-4-one, II, 421.  
 Tetramethylene sulphoxide, II, 128.  
 4:4-Tetramethylenediisopropylldantoin, II, 271.  
 4:4-Tetramethylenedihydantoin, II, 271.  
 4:4-Tetramethylene-3'-methylpentamethylenedihydantoin, II, 271.  
 Tetramethylenesulphindichloroacetylamine, II, 129.  
 Tetramethylenesulphinrichloroacetylamine, II, 129.  
 Tetramethylenesulphin-*p*-toluenesulphonylimine, II, 128.  
 2:5:7:8-Tetramethyl-2-ethylchroman, 6-hydroxy-, and its 3:5-dinitrophenylurethane, II, 235.  
 Tetramethylglucose-1:2-ene, transformation of, into 5-methoxymethylfurfuraldehyde, II, 217.  
 Tetramethylhaematoglobulin, II, 382.  
 1:1:3:5-Tetramethyl- $\Delta^{2:4}$ -cyclohexadiene, derivatives of, II, 175.  
 2:2:4:6-Tetramethyl- $\Delta^{4:6}$ -cyclohexadiene-1-aldehyde, derivatives of, II, 175.  
 2:2:4:6-Tetramethyl- $\Delta^{3:5}$ -cyclohexadienone, and its 2:4-dinitrophenylhydrazones, II, 175.  
 3:3:5:5-Tetramethylcyclohexanone, and its derivatives, II, 12.  
 1:3:5:5-Tetramethyl- $\Delta^3$ -cyclohexenol, II, 12.  
 2:3:4:6-Tetramethylindole, II, 377.  
 2:3:5:7-Tetramethylindole, and its picrate, II, 377.  
 2:3:4:6-Tetramethylindolyl methyl ketones, II, 377.  
 Tetramethyl- $\beta$ -methyl-*l*-sorbose, II, 251.  
 $\zeta\kappa\sigma$ -Tetramethyl- $\Delta^{7:9}$ -monodecadien- $\beta$ -one, II, 348.  
 Tetramethylsmic acid, metallic salts, II, 256.  
 2:5:7:8-Tetramethyl-2-pentadecylchroman, 6-hydroxy-, II, 269.

- Tetramethylpomiferin, II, 243.  
 2:5:7:8-Tetramethyl-*n*-propylchroman, 6-hydroxy-, II, 235.  
 1:2:6:7-Tetramethyl-4-isopropyl-naphthalene, and its picrate, II, 233.  
 1:3:6:7-Tetramethyl-4-isopropyl-naphthalene, and its picrate, II, 233.  
 Tetramethylpyrromethenes, and their derivatives, II, 35.  
 Tetramethyl-*l*-sorboses, II, 251.  
*cis*- and *trans*-2:6:2':6'-Tetramethylstilbene- $\alpha$ - $\beta$ -diols, 4:4'-dibromo-, and their derivatives, II, 91.  
 2:2:5:4'-Tetramethyl-3':4':5':6'-tetrahydrodibenzopyran, *d*-6''-hydroxy-, II, 202.  
 3:5:3':5'-Tetramethyltriphynylmethanes, 2:2'- and 4:4'-dihydroxy-, and their diacetates, II, 89.  
 $\alpha\alpha\gamma\gamma$ -Tetramethyl-*n*-valeric acid, and its derivatives, II, 129.  
 $\beta\beta\gamma\gamma$ -Tetramethyl-*n*-valeric acid, and its derivatives, II, 70.  
 Tetraphenylarsonium salts, *tetra-m*-amino-, and *tetra-m*-nitro-, II, 121.  
 1:2:4:5-Tetraphenylbenzene, preparation of, from benzylideneacetophenone, II, 399.  
 5:6:13:14-Tetraphenyl-6:13-dihydropentacene-6:13-diol, II, 321.  
 Tetraphenylhydrazine, dissociation of, and its derivatives, I, 103.  
 4:5:6:7-Tetraphenylhydridene, II, 253.  
 1:2:3:3-Tetraphenylindane-1:2-diol, II, 23.  
 2:2:3:3-Tetraphenylindane-1-one, II, 23.  
 1:1:3:3-Tetraphenylindane-2-one, II, 23.  
 5:7:12:14-Tetraphenylpentacene, and its peroxide, II, 321.  
 5:7:12:14-Tetraphenylpentacene-6:13-quinone, II, 321.  
 Tetraphenylcyclopentadienone, condensation of, with cyclic 1:3-dienes, II, 253.  
 4:5:6:7-Tetraphenyl-2:3:8:9-tetrahydroindene, II, 253.  
 5:7:12:14-Tetraphenyl-5:7:12:14-tetrahydropentacene-5:7:12:14-tetraol, II, 321.  
 5:7:12:14-Tetraphenyl-5:5a:13a:14-tetrahydro-6:13-quinone, II, 321.  
 $\alpha$ -Tetraphenyltolylguanidines, II, 169.  
 4:6:4':6'-Tetraphthalimidodi-*m*-tolylmethane, II, 406.  
 2:3:5:6-Tetraisopropylbenzenesulphonic acid, amide and chloride of, II, 136.  
 2-Tetrathienyl, and *tetrachlorohexa*iodo-, and *deca*chloro-, II, 61, 62.  
 Tetrathionates. See under Sulphur.  
 Tetra(tricarboethoxygalloyl)ellagic acid, II, 260.  
 Tetroic acid,  $\alpha$ -nitro-, dipole moment, dissociation constant, and structure of, I, 388.  
 Tetroxides, electronic structure and stability of, I, 317.  
 Textile fabrics, dermatitis from chemicals in, III, 638.  
 Thalamus, atrophy of, in hemiplegia associated with porencephaly and left hemisphere sclerosis, III, 587.  
 degeneration of, after lesion of prefrontal and premotor areas, III, 447.  
 functional interdependence of, and sensory cortex, III, 447.  
 in relation to cortex, III, 585.  
 stimulation of, recurrent cortical potentials after, III, 585.  
 Thalictrine, and its derivatives, II, 275.  
*Thalictrum foliolosum*, alkaloid of, II, 275.  
 Thallium, corrosion of, I, 301.  
 crystal structure of, I, 11.  
 isotopes of, radioactive, I, 4, 79.  
 Thallium bromide, spectrum of, band, I, 6.  
 bromide and chloride, double decomposition of, with the lead salts, I, 63.  
 chloride, solubility of, I, 401.  
 periodate, I, 70, 246.  
 Thallous salts, solubility of, in glycine and in alanine solutions, I, 141.  
 Thallous-thallie salts, oxidation-reduction potentials, of, I, 399.  
 Thecal gland. See under Ovaries.  
 Theelin, absorption of, from cysts, III, 524.  
 carcinogenic effect of, in Marsh-Buffalo mice, III, 614.  
 Theelin, effects of, on delayed implantation in pregnant lactating rats, III, 386.  
 treatment with, of poliomyelitis, intranasally, III, 387.  
 Theobromine, determination of, in mixtures with phenobarbital, II, 44.  
 Theophylline, derivatives, bronchodilator action of, III, 922.  
 Thermal analysis. See under Analysis.  
 conductivity, of dielectrics, I, 133.  
 expansion, of metals, I, 50, 167.  
 properties, constitution and, I, 356.  
 Thermocouples, sputtered, response of, to interrupted radiation, I, 155.  
 tube-wall, installation of, I, 116.  
 Thermodynamics, chemical, I, 368.  
 data for, sources of, I, 331.  
 of gases at high pressure, I, 321.  
 of multicomponent systems, I, 331.  
 second law of, I, 206.  
 and reaction kinetics, I, 331.  
 third law of, I, 299.  
 Thermo-electric effects, electron theory of, 30.  
 Thermometers, platinum resistance, calibration of, I, 185.  
 resistance, materials for, I, 280.  
 Thermophore, use of, for detachment of retina, III, 223.  
 Thermoregulator, vapour, I, 115.  
 Thermostats, protection of, in water-baths, III, 788.  
 thyratron, I, 155, 249.  
 with external surface control, I, 115.  
 Thermotropy, I, 356.  
 Thesauriosis, from methylcellulose, III, 668.  
 Thiamin, action of, on frog ventricle, III, 665.  
 alimentary interconversion of, and cocarboxylase, III, 830.  
 chloride, hypersensitivity to, III, 39.  
 treatment with, of diabetic acidosis, III, 470.  
 concentrations of, in tissues, III, 830.  
 content of, in human milk, III, 470.  
 deficiency of, effect of, in diabetic and non-diabetic rats, III, 909.  
 in birds, III, 406, 673.  
 induced in man, III, 761.  
 deficiency and requirement of, in man, III, 154, 830.  
 determination of, in blood and urine, by fermentation, III, 92.  
 in diet of service personnel in training, III, 762.  
 in urine, III, 321.  
 determination and metabolism of, in blood cells and urine of normal and leukaemia patients, III, 731.  
 excretion of, and its degradation products in man, III, 39, 830.  
 hydrochloride, as obligate wheal-producing agent, III, 909.  
 treatment with, of late-weaning paralysis of vitamin-*E*-deficient rats, III, 376.  
 of trypanamide amblyopia, III, 23.  
 ingested, excretion of, in liver disease, III, 154.  
 injection of, collapse after, III, 539.  
 intake of, and its relation to dietary constituents, III, 153.  
 requirement of, for mice, III, 620.  
 normal, and its use and excretion, III, 700.  
 studies on, in older subjects, III, 470.  
 subarachnoid injection of, in cats, III, 909.  
 treatment with, of neural disturbances in anaemia, III, 87.  
 urinary excretion of, after test dose, III, 762.  
 in children, III, 700.  
 See also Aneurin and Vitamin-*B*<sub>1</sub>.  
 Thiazinocyanines, II, 182.  
 Thiazole, cobalt salt complexes with, II, 384.  
 hydrochloride, II, 290.  
 Thiazole, amino-, antibodies against, III, 928.  
 Thiazoles, II, 153, 182.  
 Mills-Nixon effect with, II, 209.  
 reactions of, with 2:4-dinitrochlorobenzene and picryl chloride, II, 290.  
 Thiazoles, thiol-, II, 36.  
 Thiazole-5-carboxylamide, II, 274.  
 Thiazole-4-carboxylic acid, and 2-bromo-, ethyl ester, II, 428.  
 Thiazole-4:5-dicarboxylic acid, II, 428.  
 Thiazolidinobarbituric acid, II, 37.  
 Thiazolidinodialuric acid, II, 37.  
 Thiazolidinopyrimidine, II, 37.  
 Thiazoloneimides, II, 209.  
 $\alpha$ -4-Thiazyl-*n*-butyric acid,  $\alpha$ -2-amino-, ethyl ester, II, 153.  
 $\alpha$ -4-Thiazyl-*n*-hexoic acid,  $\alpha$ -2-amino-, ethyl ester, II, 153.  
 $\alpha$ -4-Thiazyl-*n*-octoic acid,  $\alpha$ -2-amino-, and its ethyl ester, II, 153.  
 2-Thienylalkylamines, II, 269.  
 $\alpha$ -2-Thienylethyl alcohol, and its phenylurethane, II, 179.  
 $\beta$ -2-Thienylethyl alcohol, and its phenylurethane, II, 269.  
 2-Thienylethyl isopropyl ether, II, 179.  
 $\alpha$ -2-Thienylethylamine, and its hydrochloride, II, 269.  
 5-2'-Thienyl-5-ethylbarbituric acid, II, 153.  
 $\alpha$ -2-Thienylethylmethylamine, and its hydrochloride, II, 269.  
 $\beta$ -2-Thienylethylmethylamine, and its hydrochloride, II, 269.  
 2-Thienylmethylamine, hydrochloride, II, 269.  
 2-Thienylmethylmethylamine, and its hydrochloride, II, 269.  
 $\beta$ -2-Thienylisopropyl alcohol, and its phenylurethane, II, 269.  
 $\alpha$ -2-Thienyl-*n*-propylamine, and its hydrochloride, II, 269.  
 $\gamma$ -2-Thienyl-*n*-propylamine, and its hydrochloride, II, 269.  
 $\beta$ -2-Thienylisopropylamine, and its hydrochloride, II, 269.  
 $\alpha$ -2-Thienyl-*n*-propylmethylamine, and its hydrochloride, II, 269.  
 $\gamma$ -2-Thienyl-*n*-propylmethylamine, and its hydrochloride, II, 269.  
 $\beta$ -2-Thienylisopropylmethylamine, and its hydrochloride, II, 269.  
 2-Thienyl vinyl ketone, II, 236.  
*Thiobacillus thio-oxidans*, respiration of, III, 492.  
 sulphur oxidation by, III, 939.  
 Thiocarbamide, dipole moment and structure of, I, 388.  
 reaction of, with unsaturated acids, II, 426.  
 Thiocarbamides, as goitrogenic substances, III, 807.  
 Thiocarbamides, substituted, reactions of, with inorganic ions, I, 338.  
 10-Thiocarbimidomethyl-1:2-benzanthracene, II, 11.  
 Thiocyanic acid, cobalt salt, absorption spectrum of, in solutions, I, 82.  
 ferric salt, I, 111.  
 colour of, I, 26.  
 nickel salt, light absorption of solutions of, I, 205.  
 potassium salt, solutions of, in sulphur dioxide, I, 91.  
 treatment with, of migraine, III, 926.  
 rhenium and molybdenum complex salts, reactions of, with toluene-3:4-dithiol, I, 181.  
 salts, complexes of, with  $\alpha$ -naphthylamine, I, 340.  
 goitre and myxoedema due to, III, 887.  
 standardisation of solutions of, I, 408.  
 thyroiditis after dosage with, III, 926.  
 treatment with, of hypertension, III, 14, 670.  
 Thiocyanato-1:2-benzanthracenes, II, 11.  
 5-Thiocyano-3:4-benzpyrene, II, 11.  
 Thiocyanogen, chemistry of, I, 206.  
 polymerisation of, I, 48.  
 Thiocyanogenation of organic compounds, II, 217.  
 9-Thiocyano-10-methylbenzanthracene, II, 11.  
 10-Thiocyanomethyl-1:2-benzanthracene, II, 11.  
 10-Thiocyano-9-methyl-1:2-benzanthracene, II, 11.  
 15-Thiocyano-20-methylcholanthrene, II, 11.  
 1:3:4-Thiodiazoles, 2-amino-, *C*-alkyl derivatives, II, 290.  
 Thiodiglycol, esters of, II, 296.  
 Thio-ethers, constitution of, and sensitivity to alkalis, II, 172.

- Thio-ethers, chloro-substituted, hydrolysis of, I, 401.
- Thioformic acid, chloro-, chaulmoogryl ester, II, 391.
- $\alpha$ -Thioglycerol. See Propane,  $\beta$ - $\gamma$ -dihydroxy- $\alpha$ -thiol.
- Thioindigoid dyes, constitution of, II, 332.
- 2-Thio-5-keto-4-carbethoxy-1,3-dihydropyrimidine, analytical reactions with, I, 248.
- Thiols, constitution of, and sensitivity to alkalis, II, 172.
- higher unsaturated, and their derivatives, II, 390.
- Thiol-acids, lactonisation of, I, 347.
- Thiolactones, hydrolysis of, I, 347.
- Thiol-compounds, insulin inactivation by, III, 710.
- Thiol-groups, detection of, colorimetrically, II, 159.
- determination of, in ovalbumin, III, 864.
- oxidation of, II, 189.
- Thiomalic acid, gold sodium salt, gold excretion after treatment with, in rheumatoid arthritis, III, 53.
- Thionaphthen-2,3-dicarboxylhydrazide, and its acetyl derivative, II, 119.
- Thionaphthenquinones, reactivity of carbonyl groups in, II, 332.
- 1-Thion-2-phenylbenzthiazoline, II, 239.
- Thionyl chloride, hydrolysis of, I, 369.
- reaction of, with 1-hydroxy-2-naphthoic acid and with  $\beta$ -naphthol, II, 281.
- Thionylimide, I, 275.
- Thiophen, effect of, on central nervous system, III, 19.
- Thiophen, 2-nitro-, dipole moment of, I, 289.
- Thiophen series, II, 61, 62.
- chemotherapy in, II, 112.
- Thiopheno-2':3'-1:2-anthraquinone, II, 112.
- Thiopheno-2':3'-1:2-anthraquinone-5'-carboxylic acid, II, 112.
- Thiophenol, reaction of, with *n*-butyl bromide, I, 243.
- Raman spectra of solutions of, I, 288.
- Thiophenols, action of, on quinones, II, 23.
- Thiophosphoryl triamides, I, 406.
- Thio-7-pyridingo-scarlet, II, 206.
- Thiosaccharin, reaction of, with ammonia, ammonium carbonate, carbamide, and dicarbamhydrazide, II, 335.
- with hydrazine, II, 335.
- with semicarbazide, II, 335.
- Thiosemicarbazide, action on, of hydrolytic agents, lead acetate, and nitrous acid, II, 37.
- Thiosulphates. See under Sulphur.
- Thiosulphato-tetrakisdi guanidinium dithiosulphatodicobalt, II, 251.
- Thioureas. See Thiocarbamides.
- Thioxanthene, derivatives of, II, 63.
- Thirlmere, geology of, I, 347.
- Thoracoplasty, anaesthesia of, III, 549.
- Thorax, effect on, of rays, III, 930.
- Thorium, adsorption, evaporation, and migration of, on molybdenum and tungsten, I, 355.
- radioactive,  $\gamma$ -rays of, I, 191.
- spectrum of, spark, I, 349.
- Thorium chloride octahydrate, purification of, I, 305.
- hydroxide, sols, I, 237.
- dioxide, adsorption by, of hydrogen, photo-activation of, I, 395.
- effect of, on tumours in rats, III, 614.
- heat content of, I, 116.
- phosphide, structural analogies of, with uranium phosphide, I, 199.
- silicide, crystal structure of, I, 390.
- sulphides, I, 336.
- Thorium detection:—
- detection of, I, 410.
- fluorescence test for, I, 113.
- Thorium-C", I, 4.
- Thorotrast, injections of, tissue reactions to, III, 932.
- Threads, collagenic, for wounds, behaviour of, in homologous and heterologous organisms, III, 821.
- 1-Threo- $\gamma$ -carbomethoxy- $\alpha$ - $\beta$ -diacetoxy-*n*-butyryl chloride, II, 75.
- Threonine, deficiency of, in zein hydrolysates, prepared by autoclaving, III, 618.
- determination of, III, 564.
- in maize, II, 123.
- lability of, to alkalis, II, 211.
- d*-Threonine, in pea-nut proteins, III, 905.
- Throat, mucosa of, effect of atmospheric humidity and temperature on, III, 485.
- vitamins and, III, 221.
- Thrombin, assay of, III, 195.
- prothrombin and, III, 798.
- purification of, III, 732.
- rabbit, effect of administration of, on coagulation time, III, 437.
- treatment with, of hæmorrhage, III, 89.
- Thromboangiitis, aetiological relationship of, to rickettsia, III, 878.
- Thromboangiitis obliterans, causative relationship of dermatophytosis to, III, 296.
- Thrombocytopenia, bleeding time in, action of vitamin-K on, III, 292.
- Thrombokinas, relation of, to chemistry and physiology, III, 195.
- Thrombopenia, essential, aetiology of, relation of splenic extracts to, III, 91.
- Thrombophlebitis, and pulmonary embolism, III, 574.
- gynaecological and puerperal, contrasted with phlegmasia alba dolens, III, 296.
- septic, of cavernous sinus, chemotherapy in, III, 544.
- treatment of, III, 513.
- Thromboplastin, stable, for use in Quick's prothrombin test, III, 90.
- stability and potency of, for prothrombin tests, III, 437.
- Thrombosis, aortic, with obstruction of renal arteries, III, 14.
- arterial, multiple, in blood donor, III, 90.
- cavernous sinus, treatment of, with heparin and sulphathiazole, III, 544.
- coronary, electrocardiogram in, III, 371.
- in young diabetic, III, 734.
- survival after, III, 371.
- heparin and, III, 873.
- prevention of, by dicoumarin, III, 664.
- primary, of axillary and subclavian veins, III, 441.
- renal, in infancy, III, 898.
- retinal vein, treatment of, with heparin, III, 663.
- vascular, treatment of, with heparin, III, 369.
- "isoThujone," spectrum of, absorption, II, 106.
- Thulium, spectrum of, arc, I, 349.
- Thulium determination:—
- determination of, spectrophotometrically, I, 278.
- Thylakentrin, effect of, III, 748.
- Thymectomy, treatment by, of myasthenia gravis, III, 671.
- Thymoma, in myasthenia gravis, III, 105.
- Thymonucleic acid, degradation of, by pancreas, II, 381.
- function of, in living cells, III, 541.
- tetranucleotide, II, 381.
- sodium salt, effect of ultra-violet light on, III, 264.
- Thymonucleodepolymerase, III, 419.
- activity of, in normal and cancer tissue, III, 615.
- Thymonucleohistone, effect on, of ascorbic acid and hydrogen peroxide, III, 833.
- Thymopolynucleotidase, preparation of, from pancreas, III, 777.
- Thymoxethylthylthylamine, anti-histamine activity of, III, 769.
- gastric secretion in dogs treated with, III, 392.
- pharmacology of, III, 482.
- Thymus, effect on, of castration, thyroidectomy, and replacement therapy, in rats, III, 594.
- Hassall's bodies of, epithelial hyperplasia of, induced by methylcholanthrene, III, 521.
- involution and regeneration of, in rats on choline-deficient diet, III, 744.
- irradiation of, effect of, on testicles and thymus, III, 931.
- Thymus extracts, effect of, on phosphatase in rat femurs, III, 361.
- Thymus extracts, treatment with, effect of, on rats, III, 307.
- Thyroglobulin, calorigenic action of, with different thyroxine content, III, 381.
- iodised, ultra-violet absorption spectrum of, I, 40.
- Thyroid, activity of, after iodine ingestion, III, 520.
- analysis of, and its preparations, III, 807.
- bromine uptake of, III, 117.
- calorigenic action of, in obesity, III, 594.
- deficiency of, gastric motility in, III, 116.
- disorders of, calcium and phosphorus excretion in, III, 886.
- plasma-protein-bound iodine in, III, 117.
- disturbed, treatment of, with thyrotoxic serum, III, 305.
- dried, treatment with, of gastrointestinal disturbances, III, 117.
- dysfunctions of, and their treatment, III, 227.
- effect of, on adrenaline-cyclopropane tachycardia, III, 807.
- on gonadotropic hormone function, III, 310.
- on growth of rats, III, 309.
- on iodide tolerance in rabbits, III, 381.
- on skull bone pattern in thyroparathyroidectomised rats, III, 118.
- on vago-insulin and sympathetico-adrenal systems, III, 117.
- effect on, of bromide, III, 807.
- of cold and thyrotropic hormone, III, 117.
- of vitamin-E deficiency in rats, III, 744.
- enlargement of, in diabetes in children, III, 118.
- globulin. See under Globulin and Thyro-globulin.
- growth changes in, in dogs, III, 520.
- histology of, of Indian elephant, III, 508.
- hormones of, and sex and adrenal hormones, relation between, III, 305.
- effect of, on anaphylactic shock in guinea-pigs, III, 228.
- on calcium and phosphorus metabolism, III, 595.
- on growth in thyrotoxic and myxœdematous cases, III, 450.
- on liver-glycogen metabolism, III, 746.
- in blood, III, 306.
- in relation to potassium metabolism, III, 333.
- implants of, into tadpole hind brain, effect of, on lid-closure reflex, III, 594.
- in acromegaly, III, 594.
- iodination process in, III, 593.
- iodine fixation by, in rats on iodine deficient diets, III, 450.
- iodine metabolism and, III, 117, 309, 520.
- iodine and liver-glycogen in, effect of hypophysectomy, III, 889.
- low temperature and seasonal effects in, of amphibians, III, 593.
- morphology of, in amphibian metamorphosis, III, 383.
- oxygen consumption of, effect of thyroid and thyrotropic hormones on, in guinea-pigs, III, 309.
- pathological, action of, on heart rate and metabolism of thyroidectomised rats, III, 744.
- physiology of, III, 227.
- plant substances stimulating, III, 951.
- proliferative activity of, during sexual cycle in guinea-pigs, III, 593.
- reaction of, to thyrotropic stimulation, III, 122.
- relation of, to serum-albumin and globulin levels, III, 889.
- response parallelism of, with parathyroid to hormones, III, 593.
- structure of, in whales, III, 728.
- treatment with, of umbilical hernia in infantile myxœdema, III, 381.
- Virginia deer's, III, 508.
- weight of, increase of, in pigeons, III, 309.
- See also Goitre, Graves' disease, Hypertension, etc.
- Thyroid crisis, spinal anaesthesia in, III, 886.
- Thyroid disease, blood-cholesterol, sugar tolerance, and basal metabolic rate in, III, 450.
- galactose tolerance in, III, 836.



- Thyroid extracts**, effect of, on anaphylactic response and histamine sensitivity, III, 887.  
treatment with, and low-fat diet, of acne vulgaris, III, 474.  
of obesity, III, 257.
- Thyroidectomy**, blood-lipin response to, III, 744.  
blood-lipins after, in relation to previous hypophysectomy, III, 747.  
completeness of, determination of, with radio-active iodine, III, 807.  
effect of, on blood in rats, III, 198.  
on creatine and creatinine excretion and retention in rats, III, 744.  
on lactation in rats, III, 594.  
on lymph nodes, spleen, and thymus in rats, III, 594.  
on neuromuscular activity in rats, III, 381.  
on pituitary hormones, in goats, III, 122.  
on serum-cholesterol and metabolic rate in rabbits, III, 228.  
treatment by, of angina pectoris and heart failure, III, 96.
- Thyroiditis**, acute, after thiocyanate dosage, III, 926.
- "Thyrolactin."** See Thyroprotein.
- Thyronine**, 3':5'-diiodo-, and its methyl ether, II, 282.
- Thyroparathyroidectomy**, skull bone pattern and thyroid therapy in, in rats, III, 118.
- Thyroprotein**, artificial, effect of, on growth of thyroidectomised goats, III, 306.
- Thyrotoxicosis**, basal metabolic rate determination in, tachycardia and heat sensitivity as indications for, III, 450.  
disturbed calcium metabolism in, III, 305.  
galactose-tolerance test in, III, 684.  
heart in, roentgenology of, III, 877.  
hepatic function in, III, 684.  
liver damage in, III, 744.  
lymphocytic response in, III, 196.  
manifestations of, constitutional, III, 684.
- Thyrotropin**, detection of, in urine, III, 309.  
in rabbit pituitary during growth, III, 122.  
thyroid response to, in chicks, III, 309.
- Thyroxine**, distribution of, in liver, muscle, and small intestine, III, 593.  
effect of, on blood-sugar and glycogen stores of hypophysectomised rats, III, 686.  
on bone-marrow of cats, III, 887.  
on endochondral ossification, III, 889.  
on galactose absorption and liver function, III, 744.  
on insulin content of rat's pancreas, III, 594.  
on nictitating membrane of cats, III, 593.  
on phosphatase in rat femurs, III, 361.  
on susceptibility to chloroform poisoning, III, 684.  
effect on, of placental extracts, in axolotls, III, 117.  
formation of, by thyroid tissue, III, 887.  
from 3:5-di-iodotyrosine, II, 257.  
isomerides of, activity of, III, 594.  
spectra of, absorption, ultra-violet, and its related substances, I, 40.  
synthetic, administration of, relation of heat production to water metabolism during, III, 594.  
tablets of, implantation of, III, 228.  
treatment with, of myxoedema, III, 744.  
weight loss after dosage with, effect of adrenal hormones and cardiac glucosides on, III, 596.
- Tibia**, proximal, cartilage of, effect of crystalline oestrin implants on, in rats, III, 525.  
X-ray diffraction pattern alterations of, in rickets in rats, III, 865.
- $\psi$ -Tigogenin diacetate**, reaction of, with hydrogen peroxide, II, 232.
- Tilia**, pollinosis due to, III, 71.
- Timothy grass**. See under Grass.
- Tin**, grey, thermal energy of, I, 226.  
quadrivalent, detection of, I, 279.  
spectrum of, arc, I, 1.
- Tin alloys**, with antimony, magnetic susceptibilities of, I, 169.  
with bismuth, thermodynamics of, I, 294.  
with magnesium, I, 263.
- Tin monochloride**, spectrum of, absorption, I, 385.  
periodate, I, 70.  
Stannic hydroxide, sols, coagulation and gelation of; viscosity during, I, 365.  
Stannous chloride, reduction of ferric chloride by, I, 282.  
oxide, solubility of, in perchloric acid, I, 235.
- Tin organic compounds** :—  
Tin alkyls, iodine substitution in, II, 241.  
tetraphenyl, spectrum of, absorption, I, 314.  
triethyl, electroisomeric constitution, II, 67.  
tri-*o*-tolyl, II, 430.
- Tin determination** :—  
determination of, in presence of antimony and lead, I, 279.
- Tin ores**, Bolivian, zoning in, I, 345.
- Tinea capitis**, treatment of, with oestrogens, III, 524.
- Tinnitus**, "illusion of loudness" of, aetiology and treatment of, III, 682.  
treatment of, with prostigmine, III, 682.
- Tinnitulus ariarius**, treatment of, III, 682.
- Tinospora cordifolia***, constituents of, II, 338.
- Tirak disease**, in cotton plants, III, 860.
- Tissues**, adipose, flavin content of, III, 395.  
glycogen in, III, 542.  
metabolism of, III, 642.  
animal, iron-copper-nucleoprotein complex in, III, 324.  
nucleolar staining of, III, 793.  
proteolytic enzymes of, III, 342.  
respiration of, after freezing in liquid air, III, 541.  
sulphur content of, III, 395.  
areolar, between serratus anterior muscle and thorax, III, 77.  
ascorbic acid in, III, 40, 41.  
biotin content of, III, 251.  
biotin extraction from, III, 701.  
body, hydration of, McClure-Aldrich test for, III, 94.  
cancerous, spectra of lipid fractions from, I, 194.  
cell nucleus in, structure and growth of, III, 146.  
cerebral and spinal, bovine, hydrolysis product from, II, 189.  
citric acid in, and in bone and tumour, III, 34.  
connective, effect on, of metaphen *in vivo*, III, 433.  
gastric digestion of, III, 528.  
creatine-creatinine equilibrium of, effect of incubation on, III, 523.  
cultures of, malignant and normal cell growth in, effect of potassium on, III, 904.  
metabolism of, III, 728.  
roller-tube, apparatus for, III, 660.  
technique of, III, 660.  
determination in, of gases, III, 427.  
electrolytes of, III, 874.  
embedded in wax, softening fluid for, III, 279.  
examination of, for carcinogenic factors, III, 148.  
formaldehyde-fixed, Mallory's stain for, III, 85.  
freezing of, for microtome sectioning of entire brain, III, 85.  
in sections, for use with sliding microtome, III, 570.  
glycolysis and respiration measurement of, in serum, III, 703.  
granulation, implantation of collagen-forming cultures in, III, 190.  
hard, histological sectioning of, III, 190.  
hydrogen transport in, III, 488.  
hydrolysis of, isolation of carbonyl compounds during, III, 901.  
injury to, by trypsin, III, 712.  
irradiated, recovery function of, III, 713.  
lead in, deposition and removal of, III, 52.  
liquefier for, III, 723.  
living, fatty acid derivatives in, III, 612.  
localisation of chemical constituents of, III, 75.
- Tissues**, lymphoid, changes in, of mice treated with carcinogenic and non-carcinogenic hydrocarbons, III, 36.  
cultures of, dry films of, III, 510.  
mammalian, chlamide, inulin, and urea diffusion in, III, 575.  
mineral substances in, changes in, in fish, III, 901.  
osseous, changes in, after oestradiol dosage, III, 602.  
oxygen concentration in, III, 514.  
pharmacologically active substances liberated from, by chloroform, III, 166.  
phosphatides of, nitrogenous constituents of, III, 821.  
polysaccharides in. See under Polysaccharides.  
preparation of, for sectioning, apparatus for, III, 563.  
proteolytic enzymes of, III, 777.  
regeneration and transplantation of, in man, III, 565.  
respiration of, action on, of adrenaline, III, 229.  
of propazone, in rats, III, 703.  
of *Triturus* toxin, *in vitro*, III, 541.  
sections of, preparation of, III, 661.  
skeletal, effect on, of oestrogen, in mice, III, 77, 78.  
sphingomyelin in, in cats, III, 900.  
thiamin concentrations in, III, 830.  
transamination in, III, 43, 251.  
transferring method for, III, 570.  
transplantation of, and species specificity, III, 507.  
volume of, effect of fixation, dehydration, and embedding on, III, 7.  
washing of, apparatus for, III, 8, 570.  
water in, III, 437.
- Titanium**. See Titanium dioxide.
- Titanium**, crystal structure of, with dissolved hydrogen, I, 11.  
isotopic weights of, I, 78.  
magnetic susceptibility of, I, 11.  
radioactivity of, artificial, I, 33.  
spectrum of, I, 253.
- Titanium alloys**, with carbon and iron, I, 359.  
with iron and nickel, precipitation of, from solid solution, I, 395.
- Titanium dioxide**, anatase and rutile modifications of, I, 46.  
determination of, by reduction, I, 72.  
electrical conductivity of, I, 165.  
periodate, I, 70.
- Titanium determination** :—  
determination of, photometrically, with chromotropic acid, I, 410.  
potentiometrically, I, 279.
- Titanium ores**, Sept-Iles, Quebec, I, 348.
- Tobacco**, alkaloids of, identification of, II, 384.  
carcinogenic substances in, III, 614.
- Tobacco plants**, leaves, constituents of oil of, III, 563.  
nitrogen and virus content of, in darkness, III, 944.  
potassium distribution in, III, 785.  
mosaic-infected and normal, enzymes in, III, 500.  
proteins of, III, 426.  
and of the mosaic virus, III, 273.
- Tobacco smoke**, cigarette, effect of, in pregnancy, III, 29.  
on circulation and respiration, III, 484.  
on metabolic rates, III, 712.
- Tobacco viruses**, mosaic, action on, of intestinal nucleophosphatase, III, 497.  
activity of, III, 497.  
alkaline cleavage products of, III, 857.  
analysis of, III, 720.  
aromatic amino-acids in, III, 69.  
containing radioactive phosphorus, phosphorus exchange in, III, 944.  
denaturation of, at high pressure, III, 651.  
derivatives, III, 354.  
inactivation of, by ribonuclease, III, 419.  
inactivation and reactivation of, III, 944.  
infectivity of, after 28 years, III, 720.  
mutants of, III, 857.

- Tobacco viruses, mosaic, mutation of, III, 857.  
nucleic acid of, molecular size and shape of, III, 945.  
preparation and use of, containing radio-active phosphorus, III, 857.  
protein, amino-acids of, III, 720.  
determination in, of cystine, III, 497.  
effect on, of X-rays, III, 273.  
particle size and shape of, III, 651.  
synthesis of, III, 945.  
mosaic and necrosis, separation of, III, 497.  
*α*-Tocopheramine, and its derivatives, II, 326.  
Tocopherol, determination of, photometrically, II, 432; III, 914.  
vitamin-A and carotenoid error in, III, 702.  
in blood, III, 764.  
in castor oil, III, 702.  
preparation of, compounds resembling, II, 109.  
relation of, to carotene stability, III, 914.  
See also Vitamin-E.  
*α*-Tocopherol, amperometric titration of, with auric chloride at dropping mercury cathode, III, 554.  
anti-muscular dystrophy and anti-sterility potencies of, III, 833.  
effect of, on antagonism between linoleic and linolenic esters and carotene, III, 41.  
on specific dynamic action of glycine, III, 914.  
prevention by, of cod-liver oil muscular dystrophy, in rabbits, III, 672.  
prophylactic requirement of, in rats, III, 833.  
relation of, to *α*-tocopherylquinone, II, 108.  
requirement of, for reproduction in rats and muscular dystrophy prevention in young, III, 913.  
synthetic, II, 421.  
treatment with, of muscular and neuromuscular disorders, III, 376.  
of neuromuscular diseases, III, 737.  
of nutritional muscular dystrophy, in rabbits, III, 737.  
*dl-α*-Tocopherol, determination of, in serum, photo-electrically, III, 733.  
requirement of, in rabbits, III, 833.  
Tocopheryl acetate, treatment with, of degenerative uterine changes in *E*-avitaminotic rats, III, 914.  
*α*-Tocopheryl acetate, crystalline natural, II, 374.  
calcium succinate, II, 326.  
*β*- and *γ*-Tocopheryl 3:5-dinitrophenylurethanes, II, 235.  
*iso-α*-Tocopherylquinol di-*p*-bromobenzoate, II, 326.  
*α*-Tocopherylquinone, and its derivatives, II, 108.  
Toes, clubbing of, congenital, III, 429.  
Tollens, *Bernhard*, I, 379.  
Toluene, determination of, in presence of methylcyclohexane, II, 388.  
liquid extraction of, from mixtures, I, 294.  
nitration of, vapour-phase, II, 136.  
reaction of, with *tert*-butyl chloride, catalysed by hydrogen fluoride, I, 244.  
spreading pressure of, I, 236.  
Toluene, *o*-, *m*-, and *p*-bromo-, acetylation of, II, 56.  
2-bromo-5-cyano-, and 4-bromo-2-cyano-, II, 56, 57.  
*o*-nitro-, bromination of, II, 280.  
dinitro-, condensation of, with aryl nitroso-compounds, II, 361.  
*trinitro*-. See T.N.T.  
2:4:6-trinitro-, equilibrium of, with carbazole, I, 398.  
*p*-Toluenesulphonic acid, and its cobaltic complex, II, 88.  
4'-*o*-Toluenesulphonic acid, 5:2'-dimethylazobenzene, 2-hydroxy-, sodium sulphate, II, 196.  
1-*o*-Toluenesulphonic acid, 2-naphthylamine, failure of, to produce neoplasms, III, 902.  
Toluene-3:4-dithiol, colour reactions of rhenium and molybdenum complex thiocyanates and, I, 181.  
*p*-Toluenesulphonic acid, nickel salt, II, 226.  
*p*-Toluenesulphonamide, condensation of, with sulphoxides, II, 128.  
Toluene-5-sulphonamide, 2-chloro-, II, 170.  
2-*p*-Toluenesulphonamido-5-ethyl-4-thiazolone, II, 120.  
Toluene-*p*-sulphon-*p'*-2''-hydroxy-3''-naphthoyl-aminoanilide, II, 312.  
*α*-Toluenesulphonol acid, 3:5-dinitro-, sodium salt, II, 258.  
*p*-Toluenesulphonic acid, nickel salt, II, 226.  
phenylhydrazine salt, II, 215.  
Toluene-*p*-sulphon-*N*-methyl-2''-hydroxy-3''-naphthoylaminoanilides, II, 312.  
*p*-Toluenesulphon-*N*-methyl-4-nitro-*m*-toluidide, II, 330.  
(*p*-Toluenesulphonyl)benzoic acids, nitro-, II, 63.  
9-*p*-Toluenesulphonylcarbazole, and 1-amino-, 3-bromo-, 1-nitro-, and dinitro-, and their derivatives, II, 425.  
9-Toluenesulphonylcarbazoles, nitro-, II, 424.  
*α*-Toluenesulphonyl-glycine, II, 258.  
*o*-Toluic acid, allyl ester, II, 142.  
*o*-Toluidine, dinitro-derivatives, II, 51.  
*p*-Toluidine, determination of, in presence of its isomerides, II, 340.  
Toluidine-blue, dyes related to, II, 177.  
structure of, II, 24.  
Toluidine-green, dyes related to, II, 177.  
1-*p*-Toluidinomethyl-2-naphthol, II, 205.  
*m*-Tolu-*p*-methylbenzylamide, II, 175.  
*o*-Tolonyl chloride, hydrolysis of, I, 369.  
*β*-Toluoxy-*p*-anisylpropionic acids, II, 97.  
*β*-*p*-Toluoxy-*p*-nitrophenylpropionic acids, II, 97.  
*β*-*p*-Toluoxypropionic acid, *β*-3:5-dihydroxy-, and its *p*-nitrophenylhydrazones, II, 261.  
3-*o*-Toluoxy-*o*-toluic acid, II, 100.  
2-*o*-Toluoxy-*m*-toluic acid, II, 100.  
Toluquinol *κ*-bromodecyl and decamethylene ethers, II, 195.  
Toluquinone, derivatives, bacteriostatic action of, III, 490.  
*p*-Tolu-2:5-quinone, 4-hydroxy-, acetyl derivative, reaction of, with conjugated dienes, II, 319.  
*NN'*-Tolulenedipthalimides, II, 406.  
Tolyl methyl ethers, condensation of, with *o*-anisylsuccinic anhydride, II, 285.  
*p*-Tolyl 4-cyanobenzyl ether, *ω*-cyano-, II, 174.  
*p*-Tolylacetic acid, *α*-cyano-, ethyl ester, II, 246.  
*p*-Tolylacet-*m*-toluidide, II, 175.  
Tolylazo-. See Toluenazo-.  
3-*α*-*p*-Tolyl-*β*-benzoyl-ethylflavanone, and its 2:4-dinitrophenylhydrazones, II, 327.  
*β*-*o*-Tolyl-4<sup>a</sup>-*n*-butenoic acid, *α*-cyano-, ethyl ester, II, 133.  
*α*-*p*-Tolyl-*n*-butyric acid, *α*-cyano-, ethyl ester, II, 247.  
*m*-Tolylcarbamic acid, 4-nitro-, phenyl ester, II, 401.  
*N*-*p*-Tolyl-*NN'*-dicarbethoxyvinylencarbamide, II, 271.  
*α*-Tolyl-*αβ*-dihydrokaranjone, and its derivatives, II, 420.  
5-*p*-Tolyl-1:3-dioxol-4-one, II, 421.  
*p*-Tolylethylene glycol, II, 175.  
4-*p*-Tolylhydantoin, II, 271.  
*γ*-*p*-Tolyl-*β*-hydroxyvaleric acid, ethyl ester, II, 27.  
*o*-Tolylimidocarbonic acid, *p*-tolyl ester, II, 169.  
*p*-Tolylimidocarbonic acid, phenyl ester, II, 169.  
Tolyl methylbenzyl ketones, and their oximes, II, 175.  
*p*-Tolylmethylglycide, ethyl ester, II, 27.  
4-*p*-Tolyl-4-methylhydantoin, II, 271.  
*p*-Tolylactadecane, II, 125.  
*γ*-*p*-Tolyl-4<sup>a</sup>-pentenoic acid, ethyl ester, II, 27.  
*m*-Tolylsulphonic acids, separation of, II, 223.  
2-(*p*-Tolylthio)benzaldehyde, 2- and 4-nitro-, and their oximes, and 5-nitro-, II, 63.  
2-(*p*-Tolylthio)benzoic acid, 5-nitro-, II, 63.  
2-(*p*-Tolylthio)benzophenone, II, 63.  
2-*p*-Tolylthio-4-methyldiphenylsulphone, 3-chloro-, II, 49.  
3-*α*-*p*-Tolyl-*β*-*p*-toluylethylflavanone, and its 2:4-dinitrophenylhydrazones, II, 327.  
*N*-*m*-Tolyl-*N'*-*p*-tolylacetamide, II, 63.  
*o*-Tolyltrimethylammonium perchlorate, II, 221.  
salts, 4-nitro-, II, 221.  
*p*-Tolylurethane, II, 169.  
Tomatoes, green, vitamin-C from, III, 912.  
Maine, ascorbic acid in, III, 653.  
Tomatoes, respiration and ripening of, III, 652.  
tangerine, pigments of, II, 293.  
Tomato plants, roots, *β*-gentiobioside in, III, 275.  
growth of, inhibition of, III, 949.  
nutrition of, with glucose or sucrose, III, 72.  
with sucrose, III, 72.  
Tomato viruses, bushy stunt, protein, homogeneity of, III, 487.  
mutation of, III, 857.  
Tomography, placental site localisation by, III, 454.  
Tongue, taste bud distribution in, in kittens, III, 683.  
Tonometry, accuracy of, III, 222.  
Tonsils, pig, acid-fast bacteria in, III, 346.  
*Torpedo marmorata*, electric organ of, cholinergic nature of nerves of, III, 804.  
*Torula cremoris*, cells, sensitivity of, to X-rays, III, 933.  
*Torula histolytica*, immunity to, in mice, III, 642.  
Tourette's disease, III, 738.  
Toxicarols, m.ps. of, II, 111.  
Toxicology, spectrograph in, III, 415.  
Toxiferins, and their salts, II, 157.  
Toxins, culture media for, III, 719.  
Schwartzman, ocular reaction to, III, 69.  
Trachea, catheter for instilling iodised oil in, III, 15.  
Trachoma, relation of agents of, to lymphogranuloma antigen, III, 856.  
treatment of, local, with sulphanilamide, III, 480.  
with albucid, III, 885.  
with sulphanilic derivatives, III, 480.  
Weil-Felix test in, III, 854.  
Trachyandesite in lavas of Puy chain, I, 252.  
*Tradescantia bracteata*, chromosomes of, effect of ionising radiations on, III, 364.  
*Tragopogon dubius*, effect of length of day on, III, 562.  
Tragus, malformation of, III, 362.  
Transamination, II, 77.  
amination, and deamination, III, 766.  
in tissues, tumours, and liver, III, 43, 251.  
Transmutation, I, 373.  
Trap for live animals, III, 183.  
Trapezius. See under Muscle.  
Trauma, post states of, electroencephalogram in, III, 740.  
vascular pattern changes of brain in, III, 877.  
*Trebis caudatus*, binomics and physiology of, III, 696.  
Trees, boron content of, III, 862.  
physiology of, III, 652.  
Trehalase, III, 717.  
Trehalose, III, 717.  
octaazobenzene-4-carboxylate, II, 395.  
octapropionate, II, 79.  
*Treponea pallidum*, staining of, III, 851.  
Triacetylnorchoyl benzoyloxymethyl ketone, II, 415.  
Triacetyl-2:4:6-trimethyldesylamine, II, 407.  
Trialkylhydrazines, preparation of, II, 4.  
Tri-*m*-anisylmethylarsonium iodide, II, 121.  
Triazole, dieyano-, dissociation constant of, I, 368.  
1:2:3-Triazolindazole, II, 273.  
*NNS*-Tribenzyl-*dl*-homocysteine, II, 3.  
*Tribolium confusum*, adult, starved, survival of, III, 612.  
egg production in, nutrition in relation to, III, 152.  
growth factors for, III, 830.  
Tri-5-carbethoxy-2:4-dimethyl-3-pyrrylmethane, II, 380.  
3:5:4'-Tricarboethoxy-1:4:3':5'-tetramethanedi-pyrrylmethane, II, 330.  
3:5:5'-Tricarboethoxy-1:4:4'-trimethyldipyrrolmethane, 3'-bromo-, II, 330.  
3:5:5'-Tricarboethoxy-1:4:4'-trimethyldipyrrolmethane-3-propionic acid, ethyl ester, II, 330.  
*Trichechus latirostris*, blood-vascular bundles in, compared with other primates, III, 789.  
*Trichinella spiralis*, antibody, serum fraction associated with, III, 198.

- Trichinosis*, diagnosis of, by complement fixation, III, 562.  
 outbreak of, III, 491.  
 treatment of, with sulphapyridine, III, 479.
- Trichobezoar*, III, 816.
- Trichocereine*, pharmacology of, III, 167.
- Trichocereus terschecki*, alkaloid of, pharmacology of, III, 167.
- Trichomonas fatus*, agglutination of, in immune rabbit sera, III, 350.
- Trichomonas hepatica*, carbohydrate metabolism of, III, 939.
- Trichomonas hominis*, cultures, bacteria-free, III, 491.
- Trichomonas vaginalis*, cultures, effect of female hormones on, III, 491.
- Trichophytin*, fractionation of, III, 350.  
 undenatured, preparation of, III, 350.
- Trichophyton*, growth substance requirement and synthesis by, III, 937.
- Trichosurus vulpecula*, kidney of, effect of oestrogenic substances on, III, 28.  
 pouch of, effect on, of chorionic gonadotropin, III, 604.  
 pouch and scrotum of, effect of synthetic oestrogens, stilbestrol, and hexoestrol on, III, 131.  
 vitamin-B, content of urine of, III, 761.
- Tricoderma*, toxin of, III, 937.
- Tricresol*, effect of, on vitamin-A content of blood and liver of chicks, III, 620.
- Tri-o-cresyl phosphate*, systematic nervous affinity to, III, 883.
- n*-Tridecan- $\beta$ -ol,  $\beta$ -nitro-, II, 295.
- Tridecoic acid,  $\mu$ -bromo-, and  $\mu$ -iodo-, and their methyl esters, II, 344.
- Tri-(3,5-dimethylphenyl)methane, acid strength of, I, 145.
- 2,4:6-Triethylacetophenone, 3-bromo-, II, 93.
- Triethylamine, first-order transition of mixtures of water and, I, 140.
- Triethylammonium decaborate, I, 335.
- 2,4:6-Triethylbenzaldehyde, and its derivatives, II, 171.
- 2,4:6-Triethylbenzenesulphonamide, II, 136.
- 2,4:6-Triethylbenzoic acid, methyl ester, II, 14.
- 2,4:6-Triethylbenzoylacetate, 3-bromo-, II, 93.
- $\alpha$ -2,4:6-Triethylbenzoylpropionic acid,  $\alpha$ -3-bromo-, and its derivatives, II, 93.
- 2,4:6-Triethylbenzyl chloride, II, 92.
- 2,4:6-Triethylphenylacetic acid, and its amide, II, 92.
- 2,4:6-Triethylphenylacetomesitylene, II, 92.
- 2,4:6-Triethylphenylacetone, II, 92.
- 2,4:6-Triethylphenylacrylylglycine, *N*- $\beta$ -chloro- $\beta$ -3-bromo-, II, 93.
- 2,4:6-Triethylphenyl  $\alpha$ -mesitylvinyl ketone, II, 92.
- 2,4:6-Triethylphenyl  $\alpha$ -methylacrylic acid,  $\beta$ -chloro- $\beta$ -3-bromo-, II, 93.
- 2,4:6-Triethylpropionophenone, 3-bromo-, II, 93.
- 2,3:5-Triethylthiophen, II, 62.
- Trifidin, III, 499.
- Trifolium pratense*, vernalisation of, III, 861.
- Trifolium repens*, vernalisation of, III, 72.  
 white, growth of, in nutrient solutions containing potassium, III, 358.
- Triglycerides, natural, autooxidation and film formation of, II, 346.
- 1,3:5-Tricyclohexylbenzene, polymorphism of, II, 354.
- 4:5:6-Triketo-4:5:6:7-tetrahydroindazole, 7:7-dichloro-, dihydrate, II, 273.
- Trilons A and B, calcium and copper salts, II, 249.
- Trimeresurus mucrosquamatus*, toxin of, effect of, on carbohydrate metabolism of rabbits, III, 836.
- Trimethin[2-(3-ethylidihydro-6:7-benzbenzoxazole)][3-(2:4-benzthiazine)], II, 182.
- Trimethin[2-(3-ethylidihydro-4:5-benzbenzthiazole)][3-(2:4-benzthiazine)], II, 182.
- Trimethin[2-(3-ethylidihydrobenzbenzoxazole)][3-(2:4-benzthiazine)], II, 182.
- Trimethin[2-(3-ethylidihydrobenzbenzthiazole)][3-(2:4-benzthiazine)], II, 182.
- Trimethin[2-(3-ethylidihydrobenzthiazole)][3-(2:4-benzthiazine)], II, 182.
- 2,3:6-Trimethoxyacetophenone, II, 410.
- 3,4:6-Trimethoxyacetophenone, 2-hydroxy-, II, 10.
- Trimethoxyacetophenones, *mono*- and *di*-hydroxy-, II, 10.
- 3,4:5- and 3,4:6-Trimethoxybenzenes, 1:2-dihydroxy-, and their diacetyl derivatives, II, 10.
- 2,4:6-Trimethoxy- $\beta$ -benzylcinnamic acid, II, 326.
- 3,4:5-Trimethoxy- $\gamma$ -chloroallylbenzene, II, 357.
- 4:6:7-Trimethoxy-1-3':4'-dimethoxyphenyl-2:3-dimethylnaphthalene, II, 403.
- 2,3:6-Trimethoxy-1-ethylbenzene, II, 410.
- 2,4:6-Trimethoxyphenyl *p*-hydroxybenzyl ketone, II, 303.
- Trimethoxy- $\beta$ -propylcinnamic acids, II, 375.
- Trimethoxystilbenes,  $\alpha$ -cyano-, II, 257.
- Trimethyl phosphate, eutectic temperature of water and, I, 23.
- Trimethylacetic acid, reaction of, with bromine in presence of oxygen, II, 70.
- $\beta\beta$ -Trimethyladipic acid, II, 227.
- Trimethylamine, distribution of dimethylamine and, between chloroform and water, I, 19.  
 effect of, on sexual growth, III, 813.
- Trimethylammonium decaborate, I, 335.
- 2,2:5'-Trimethyl-4''-isomethyl-3':4':5':6'-tetrahydrodibenzopyran, 6''-hydroxy-, II, 111.
- 1:4:7-Trimethylazulene, preparation of, II, 286.
- 2,3:6-Trimethylbenzaldehyde, and its derivatives, II, 15.
- 1:2:4-Trimethylbenzene, ozonisation of, II, 191.
- Trimethylbenzenesulphonamides, II, 136.
- 2,4:6-Trimethylbenzenesulphonyl chloride, II, 136.
- 2,4:6-Trimethylbenzoic acid, *tert*.-butyl ester, II, 141.  
 esters, II, 14.
- 2,4:6-Trimethylbenzoic anhydride, II, 95.
- 3(or 2):6:8-Trimethylbenzopyran-2(or 3)-carboxylic acid, and its ethyl ester, II, 374.
- 2,4:6-Trimethylbenzoylacetate, 3-bromo-, II, 93.
- 2,4:5-Trimethylbenzyl chloride, 3:6-dihydroxy-, acetyl derivatives, II, 255.
- 3,4:6-Trimethylbenzylacetacetic acid,  $\alpha$ -2:5-dihydroxy-, 5-acetyl derivative, ethyl ester, II, 235.
- 2,4:5-Trimethylbenzylmalonic acid, 3:6-dihydroxy-, 3-acetyl derivative, diethyl ester, II, 255.
- $\alpha\alpha$ -Trimethylbutadiene hydrobromide, reaction of, with magnesium cyclohexyl chloride, II, 185.
- $\beta\beta$ -Trimethylbutane- $\alpha\delta$ -dicarboxylic acid, and its dimethyl ester, II, 234.
- $\beta\gamma$ -Trimethyl-*n*-butan- $\alpha$ -ol, II, 72.
- 2,2:5'-Trimethyl-5''-*n*-butylhexahydrodibenzopyran, 3-hydroxy-, II, 236.
- $\alpha\eta\eta$ -Trimethyl-*c*-*tert*-butyl-*n*-octane- $\beta\delta$ -dione, and its derivatives, II, 349.
- $\alpha\beta\beta$ -Trimethyl-*n*-butyramide,  $\alpha$ -hydroxy-, II, 35.
- $\alpha\beta\beta$ -Trimethyl-*n*-butyric acid, and its methyl ester, II, 248.
- spiro*-2-[5:7:8-Trimethylchroman]-17'-[3'-hydroxy-4'-androstene, 2:6-hydroxy-, II, 268.
- 2':3':4'-Trimethylchromono-7':8':6:5-pyrone, II, 236.
- 3,4:7-Trimethylcoumarin, 6-hydroxy-, and its acetate, II, 202.
- 2,4:6-Trimethyldesylamine hydrochloride, II, 407.
- 2:5:8-Trimethyldicyclo-[0:3:5]-decan-5-ol, II, 287.
- 2:5:8-Trimethyldicyclo-[0:3:5]-decene, II, 287.
- 1(or 2):4:5-Trimethyl-2(or 1):6-diethyl-4-bromo-vinyltripyrrol-2  $\alpha$ :4'-diene-6'-carboxylic acid, 1'-hydroxy-, methyl ester, II, 334.
- 3:3':5'-Trimethyl-4'-diethylpyrromethane, 5-hydroxy-, II, 427.
- 1:3:6-Trimethyl-2:5-diethyltripyrrol-2  $\alpha$ :4' $\beta$ -diene-4'-propionic acid, 1'-hydroxy-, methyl ester, II, 333.
- Trimethyldiphenyls, 2'-amino-, and 2'-nitro-, II, 398.
- $\beta\kappa$ -Trimethyl- $\Delta^4$ -dodecaenal, II, 348.
- Trimethylene glycol, chain structure of linear polyesters of, I, 136.
- Trimethylenimine hydriodide, II, 165.
- Trimethylerythrin, II, 405.
- $\alpha\gamma\eta$ -Trimethyl- $\beta$ - $\beta'$ -ethoxyethylnonoic acid, ethyl ester, II, 345.
- 2:4:6-Trimethyl-3-ethylbenzenesulphonamide, II, 136.
- 3':3(or 4):5'-Trimethyl-4'-ethylpyrromethane, 5-hydroxy-, II, 333.
- 2:2:5'-Trimethyl-4''-ethyl-3':4':5':6'-tetrahydrodibenzopyran, 6''-hydroxy-, II, 111.
- 1:3:6-Trimethyl-2-ethyltripyrrodiene(2' $\alpha$ , 4' $\beta$ )-4:5-dipropionic acid, 6'-bromo-1'-hydroxy-, and 1':6'-dihydroxy-, dimethyl esters, II, 118.
- (+)- $\alpha\alpha\beta$ -Trimethylglutaric acid, and its dimethyl ester, II, 234.
- 2:2:5'-Trimethyl-5''-*n*-heptylhexahydrodibenzopyran, 3-hydroxy-, II, 236.
- 3:3:5-Trimethyl- $\Delta^{1:3}$ -cyclohexadienol, II, 12.
- trans*-2:2:6-Trimethylcyclohexanecarboxylamide, II, 328.
- 1:2:2-Trimethylcyclohexane-1-carboxylic acid, and its amide, II, 141.
- 2:2:6-Trimethylcyclohexanecarboxylic acid, and its derivatives, II, 225.
- 3:4:4-Trimethylcyclohexane-1:2-dione semicarbazone, II, 228.
- 4:4:5-Trimethylcyclohexane-1:2-dione, II, 227.
- 3:3:4-Trimethylcyclohexanone, and its semicarbazone, II, 234.
- 3:4:4-Trimethylcyclohexanone, and 6:6'-dibromo-, II, 227.  
 and its derivatives, II, 228.
- 2:2:4-Trimethyl- $\Delta^3$ -cyclohexenecarboxylic acid, II, 195.
- 3:5:5-Trimethyl- $\Delta^2$ -cyclohexenol, and its derivatives, II, 13.
- Trimethyl- $\Delta^2$ -cyclohexenones, and their derivatives, II, 228.
- 3:3:5-Trimethyl- $\Delta^4$ -cyclohexenone, II, 12.
- 3:4:6-Trimethyl- $\Delta^3$ -cyclohexenylmethyl alcohol, and its naphthylurethane, II, 403.
- $\gamma\zeta$ -Trimethyl- $\Delta^6$ -*n*-hexin- $\gamma$ -ol, II, 246.
- $\beta$ -2:2:6-Trimethylcyclohexylaminoethyl alcohol, and its picrate, II, 394.
- 2-1':1':3'-Trimethylcyclohexyl-4:6-dimethylpiperidine, and its 1-benzoyl derivative, II, 328.
- 2-1':1':3'-Trimethylcyclohexyl-4:6-dimethylpyridine, II, 328.
- 2:2:5'-Trimethyl-5''-*n*-hexylhexahydrodibenzopyran, 3-hydroxy-, II, 236.
- 2:2:5'-Trimethyl-4''-isohexyl-3':4':5':6'-tetrahydrodibenzopyran, 6''-hydroxy-, II, 111.
- 2:2:4-Trimethyl-6-hydroxymethyl- $\Delta^{3:5}$ -cyclohexadienone, and its derivatives, II, 175.
- 1:2:3-Trimethyl-5-indolyl methyl ketone, II, 377.
- $\alpha$ - and  $\beta$ -Trimethylleucopterins, II, 152.
- 3:4:6-Trimethylmannose, derivatives of, II, 81.
- 2:3:4-Trimethyl- $\alpha$ -methoxy-*p*-carbomethoxyphenyl- $\beta$ -*d*-glyceronide, methyl ester, II, 143.
- 1:1:3-Trimethyl-2- $\gamma$ -methyl- $\Delta^{6:8}$ -hexadienylcyclohexane, II, 328.
- 2:2:5'-Trimethyl-5''-*n*-octylhexahydrodibenzopyran, 3-hydroxy-, II, 236.
- Trimethyllosajetin, II, 243.
- $\beta\beta\delta$ -Trimethylpentane, gaseous, heat capacity of, I, 139.
- 3:3:4-Trimethylcyclopentane-1-carboxylic acid, 1-hydroxy-, II, 227.
- 2:2:4-Trimethylcyclopentanone, and its derivatives, II, 228.
- 3:3:4-Trimethylcyclopentanone, and its derivatives, II, 227, 234.
- 3:4:4- and 3:5:5-Trimethyl- $\Delta^2$ -cyclopentanones, and their derivatives, II, 228.
- 9:3':3'-Trimethylcyclopentenophenanthrene, and its picrate, II, 365.
- 2:4:5-Trimethylphenacyl bromide, II, 99.
- 2:4:6-Trimethylphenylacrylic acid,  $\beta$ -chloro- $\beta$ -3-bromo-, II, 93.
- 2:4:6-Trimethylphenylacrylylglycine, *N*- $\beta$ -chloro- $\beta$ -3-bromo-, II, 93.
- 2:4:6-Trimethylphenyl- $\alpha$ -methylacrylylglycine, *N*- $\beta$ -chloro- $\beta$ -3-bromo-, II, 93.
- Trimethylphloroglucinol, II, 260.
- (+)- $\beta\beta\gamma$ -Trimethylpicmic acid, and its dimethyl ester, II, 234.
- Trimethylpinacolyammonium iodide, II, 132.
- 2':2':6'-Trimethylpiperidinomethyl-6-methoxy-4-quinolylcarbinol, and its dipicrate, II, 288.

- 1:1:2-Trimethylcyclopropane, formation of, from  $\alpha$ -chloro- $\beta\beta$ -dimethylbutane, II, 83.
- 2:2:5'-Trimethyl-5''-*n*-propylhexahydrodibenzopyran, 3-hydroxy-, II, 236.
- 1:6:7-Trimethyl-4-isopropyl-naphthalene, and its picrate, II, 233.
- 1:3:5-Trimethylpyrrole, compounds of, with quinones, II, 377.
- 3:3:5'-Trimethylpyrromethene-4'-propionic acid, hydrobromide, II, 427.
- 3:3(or 4):5-Trimethylpyrromethene-4'-propionic acid, 5-hydroxy-, methyl ester, II, 333.
- Trimethylquinol diacetate, chloromethylation of, II, 255.
- 2:3:6-Trimethylquinoline-4-carboxylic acid, II, 378.
- d*-Trimethylsuccinic acid, anil and  $\beta$ -naphthyl of, II, 234.
- 2:2:5'-Trimethyl-3':4':5':6'-tetrahydrobenzopyran, II, 111.
- 2:2:5'-Trimethyl-3':4':5':6'-tetrahydrodibenzopyran, 4':6'-dihydroxy-, II, 111.
- 3:4:6-Trimethyl-1:2:3:6-tetrahydrophthalic anhydride, II, 293.
- 4:6:7-Trimethyltocol, 5-amino-. See  $\alpha$ -Tocopheramine.
- $\delta\delta\mu$ -Trimethyltridecyl bromide anil chloride, II, 421.
- $\alpha\gamma\gamma$ -Trimethyl-*n*-valeric acid,  $\alpha$ -hydroxy-, and its derivatives, II, 35.
- Trinidad, oilfield labourers in, diet of, III, 467.
- Triolein, films of, on water ozonisation of, I, 396.
- Triisooxazoles, II, 383.
- d*-Tripeptides, hydrolysis of, by serum enzymes, III, 776.
- Triphenyl-6-acetamido-*m*-tolylmethane, II, 87.
- Triphenylamine, reactions of, with dimethyl sulphate, II, 307.
- Triphenylarsine, metallation of, II, 183.
- Triphenylarsine, 4:4'-diamino-, and its derivatives, II, 183.
- 1:3:5-Triphenylbenzene, spectrum of, Raman, I, 387.
- 2:3:4-Triphenylbenzochromanol perchlorate, II, 421.
- $\alpha\beta\gamma$ -Triphenyl- $\Delta\beta$ -*n*-butenoic acid, and its esters, II, 253.
- Triphenylcarbinol, *p*-chloro-*di-p*-bromo-, II, 399.
- 1:3:3-Triphenyl-2:3-dihydroindole, 2:2-dichloro-, II, 423.
- 1:2:3-Triphenyl-3:4-dihydronaphthalene, II, 254.
- $\alpha\gamma\gamma$ -Triphenylethane, preparation of, II, 304.
- Triphenylethylene, treatment with, of tumours of testicles, III, 615.
- Triphenylmethane, acid strength of, I, 145.
- Triphenylmethane, 4:4'-dicyano-, II, 173.
- Triphenylmethane dyes, carbinol formation in, I, 104.
- spectra of, absorption, I, 194.
- vinylene homologues of, II, 194.
- 3-Triphenylmethoxy- $\Delta^5$ -cholonic acid, methyl ester, II, 103.
- Triphenylmethyl chloride, reactions of, with carbohydrates on pyridine, II, 6.
- peroxide, *p*-chloro-*di-p-p'*-bromo-, II, 399.
- propargyl ether, II, 309.
- $\delta\delta\delta$ -triphenyl- $\Delta\beta$ -butinenyl ether, II, 309.
- $\delta\delta\delta$ -triphenyl-*n*-butyl ether, II, 309.
- Triphenylmethylarsonium salts, *tri-m*-amino-, *tri-p*-bromo-, *tri-4*-bromo-3-nitro-, and *tri-m*-nitro-, II, 121.
- 6-Triphenylmethyl-2-methyl- $\alpha$ -methyl-*d*-altroside 3:4-diacetate, II, 350.
- 2:4:5-Triphenyl-2-methyl- $\Delta^4$ -cyclopentene-1:3-dione, II, 23.
- Triphenylmethylthiolacetic acid, *p*-nitro-, II, 172.
- N*-Triphenylmethyl-*o*-toluidine, rearrangement of, II, 87.
- 1:2:3-Triphenylnaphthalene, II, 253.
- 1:3:3-Triphenyloxindole, II, 423.
- 1:3:4-Triphenylcyclopentadiene, 2:5-dihydroxy-, dibenzoyl derivatives, II, 23.
- 2:4:5-Triphenyl- $\Delta^{2:4}$ -cyclopentadienone, 3-hydroxy-, benzoyl derivative, II, 23.
- 2:4:5-Triphenylcyclopentane-1:3-dione, II, 23.
- 2:4:5-Triphenyl- $\Delta^4$ -cyclopentene-1:3-dione, and its derivatives, and 2-bromo-, II, 23.
- Triphenylphosphine, 4:4'-diamino-, and its derivatives, II, 183.
- 3:4:6-Triphenylphthalic acid, II, 320.
- Triphenyl-*m*-tolylmethane, and *p*-amino-, and tetranitro-, II, 87.
- 2:3:4-Triphenyl-4-*p*-tolyl-6-methyl-1:4-benzopyran, II, 109.
- Triphenyltriphosphonitrile, chlorodihydroxy-, II, 430.
- Triphenyl-*p*-xylene, II, 319.
- Triphosphonitrilic chloride, derivatives of, II, 430.
- Triphosphopyridine nucleotide, determination of, III, 503.
- 1:3:5-Triphthalimidobenzene, II, 406.
- 4:4':4''-Triphthalimido-3-methyltriphenylcarbinol, II, 406.
- 4:4':4''-Triphthalimido-3-methyltriphenylmethane, II, 406.
- 2:4:6-Triphthalimidotoluene, II, 406.
- 2:4:6-Triisopropylacetophenone, II, 311.
- 2:4:6-Triisopropylbenzaldehyde, and its semicarbazone, II, 171.
- 2:4:6-Triisopropylbenzoic acid, methyl ester, II, 14.
- p*-tolyl ester, II, 311.
- 2:2':4':6'-Triisopropylbenzoyl-3-phenyl-2:3-dihydrobenzofuran, II, 108.
- 2:4:6-Triisopropylbenzyl chloride, II, 171.
- Triisopropylhydrazine, and its picrate, II, 4.
- 2:4:6:2':4':6'-Triisopropyl-*n*- and -*iso*-hydrobenzoin, and their diacetates, II, 171.
- Triisopropylphenyl 2-benzoyl ketone, II, 108.
- 2:4:6-Triisopropylpropiophenone, II, 311.
- 2:4:6:2':4':6'-Triisopropylstilbene, II, 171.
- Tripterygium wilfordii, roots, red pigment in, III, 426.
- toxicity of, III, 484.
- Trisulfuraldoximecobalt, II, 28.
- Trisulfuraldoximenickel, II, 28.
- Trisulfuraldoximepalladium, II, 28.
- Trisulfuraldoximeplatinum, II, 28.
- $\alpha$ -Trisulphidobenzoic acid thioanhydride, identity of, with 2-dithiobenzoyl, II, 58.
- $\beta$ -Triteleimidol, II, 267.
- Triterpenes, II, 266, 267, 371, 372.
- Triterpene acids, constitution of, II, 148.
- Triterpene group, II, 201.
- 2-Trithienyl, and its bromo- and iodo-derivatives, II, 61.
- Tritium, vapour pressure of, I, 233.
- Tri-*o*-tolyl phosphate, poisoning by. See under Poisoning.
- Trilon, heterochromatin in, III, 365.
- Triturus, toxin, effect of, on tissue respiration *in vitro*, III, 541.
- Triturus pyrrhogaster, eggs of, unsegmented, organisation of, III, 4.
- Triturus viridescens, brachial region of, sympathetic of, III, 741.
- terrestrial phase of, III, 593.
- Tropical fever. See under Fever.
- Tropine-esterase. See under Esterase.
- Trout, anæmic, hæmoglobin regeneration in, fed liver and fly maggots, III, 87.
- Truss, inguinal, dermatitis due to, III, 357.
- $\gamma$ -Truxillic acids, and their derivatives, II, 312.
- Truxillic acids, molecular rearrangements with, II, 312.
- Trypaflavin, treatment with, of ascitic tumours in mice, III, 824.
- Trypan-blue, dibromo-, radioactive, localisation of, in inflammatory lesions, III, 863.
- Trypanosoma equiperdum, culture of, in chicken embryos, III, 491.
- Trypanosoma lewisi, glucose metabolism of, effect of carbon dioxide on, III, 268.
- Trypanosoma rhodesiense, virulence of, in relation to blood temperature of host, III, 60.
- Trypanosomiasis, bovine, immunisation against, III, 491.
- Tryparsamide, arsenic content and trypanocidal activity of human blood after administration of, III, 168.
- dermatitis due to, III, 337.
- treatment with, of syphilis, gastritis after, III, 843.
- Trypsin, action of, kinetics of, III, 342.
- on blood-histamine, III, 12, 632.
- on insulin digests, III, 936.
- crystalline, inactivation of, III, 171.
- determination of, in duodenal contents with Evelyn colorimeter, III, 692.
- digestion with, of sputum and other fluids in bacteriology, III, 779.
- heparin liberation by, III, 369.
- proteolysis by, inhibited by soaps, III, 555.
- tissue injury by, III, 712.
- Tryptophan, deficiency of, cataract and other manifestations of, III, 742.
- determination of, in edible Bengal fishes, III, 901.
- in protein hydrolysates, III, 864.
- reaction of, with tryptophanase, III, 646.
- requirement of, for chicks, III, 468.
- Tubes, thermocouples in walls of, I, 116.
- Tuberculin, carbohydrates and proteins from, III, 68.
- in dermatologic diagnosis, III, 719.
- patch test with, III, 351.
- protein of, identification of antibody to, III, 495.
- tests for, III, 495.
- positive, age incidence of, III, 495.
- toxicity of, inhibition of, in tuberculous guinea-pigs, III, 649.
- treatment with, of acne in tuberculosis, III, 855.
- Tuberculoma, pituitary. See under Pituitary.
- Tuberculo-protein, desensitisation with, III, 177.
- Tuberculosis, adrenal function and, III, 808.
- aggravating action of olive oil on, inhibition of, by ethyl succinate in guinea-pigs, III, 773.
- arrested, hospital employment of patients with, III, 929.
- blood-protein in, electrophoretic behaviour of, III, 437.
- cellular proteinases in, of rabbits, III, 648.
- cerebral inoculation against, III, 719.
- course of, in relation to liver, III, 244.
- diabetes and, III, 648.
- diagnosis of, tests for, in man, III, 942.
- effect of promin on blood in, III, 838.
- effect on, of chlorin-*e*-rhodin-*g*, III, 479.
- of cod-liver oil, III, 42.
- of sulphonamides, sulphones, and phosphorus compounds, III, 628.
- of vitamin-C, in guinea-pigs, III, 155.
- hæmoptysis in, effect of parathyroid and calcium on, III, 89.
- immunopathological and specific features of, III, 273.
- inoculation, III, 351.
- intrapleural, following talc pleurisy, III, 648.
- osteochondritis in relation to, III, 281.
- photocentgenography in, III, 714.
- polysaccharide from amyloid-bearing tissues in, III, 855.
- pulmonary, III, 351.
- ascorbic acid in, and vitamin-A, III, 327.
- collapse therapy for, rôle of intracavity pressures in, III, 582.
- gastroscopy of, III, 816.
- mortality from, occupational risk in, III, 485.
- prothrombin deficiency in, III, 664.
- prothrombin studies in, III, 91.
- X-ray study of cavities in, III, 443.
- spread of, by blood, lymph, and sputum, III, 67.
- urinary excretion of ascorbic acid in, III, 702.
- vitamin-C nutrition in, III, 911.
- renal, diagnosis of, III, 942.
- unilateral, associated with hypertension, III, 296.
- treatment of, during pregnancy, III, 844.
- with promin, III, 707, 919.
- with sodium *pp'*-diaminodiphenylsulphone-*NN*-diglucosulphonate, III, 479.
- with sulphanimide, III, 161.
- Tubularia, oxygen consumption and regeneration rate in, III, 188.
- respiration and reconstitution of, effect of respiratory inhibitors on, III, 703.

- Tubularia crocea*, hydranth formation in, effect of temperature on, III, 5.
- Tularaemia, "lyovae" in, III, 491.
- treatment of, with acriflavine, III, 411.
- Tumorigenesis. See Tumours, development of.
- Tumours, acid and alkaline phosphatase distribution in, III, 698.
- adrenal. See under Adrenals.
- animal, localisation of colloidal dyes in, III, 534.
- ascitic, growth of, in mice, III, 824.
- treatment of, with trypanflavin in mice, III, 824.
- benzpyrene, effect of racemic peptides on, in mice, III, 250.
- biotin content of, III, 251.
- biotin distribution in, III, 903.
- blood- and kidney-catalase activity of animals with, III, 824.
- bone. See under Bone diseases.
- brain. See under Brain.
- Brown-Pearce, transplantability of, blood cell factors associated with, III, 825.
- carbohydrate metabolism of, effect of visible light on, III, 325.
- causation of, serology of, III, 402.
- cells of, behaviour of, in tissue culture subjected to reduced temperatures, III, 534.
- cytoplasmic nucleotide in, III, 903.
- resistance of, to amine growth-inhibiting action, III, 151.
- cerebral. See under Cerebrum.
- chemistry of, III, 615, 825.
- chicken, antigenic nature of purified agent of, III, 150.
- choline in, III, 757.
- colloid, para-Golgi apparatus in, atypical forms of, III, 466.
- conjunctive, development of, by artificial oestrogens, III, 465.
- corneal. See under Eyes, cornea of.
- development of, oestrogenic hormones in, III, 823.
- ear. See under Ears.
- effect on, of deoxycorticosterone acetate and testosterone propionate, III, 465.
- of neutrons and X-rays, III, 465.
- of thorium dioxide, in rats, III, 614.
- endocrine gland. See under Glands.
- enzymes of, effect of X-rays on, III, 465.
- enzymic activity of, in mice, III, 400.
- Ewing's, histogenesis of, III, 617.
- glomus, III, 441.
- "epitheloid" cell of, III, 514.
- growing, effect of one on another, III, 758.
- growth of, haemoglobin level in, III, 758.
- inhibition of, by chemicals, III, 399.
- heart. See under Heart.
- hepatic. See under Liver.
- human, analysis of, III, 324.
- immunity to, III, 534.
- immunological specificity of material sedimentable at high speed in, III, 402.
- in Korea, statistics of, III, 536.
- in one of homologous twins, III, 825.
- induced, cell viscosity of, III, 615.
- in fowls, III, 36, 249.
- spontaneous, and transplanted, growth and incidence of, influence of di(hydroxy-methyl) peroxide on, III, 825.
- induction of, after removal of methylcholanthrene-cholesterol pellets in mice, III, 613.
- by benzpyrene in mice, III, 902.
- by butter-yellow, procarcinogenic effect of biotin in, III, 697.
- by liver tissue from methylcholanthrene-injected mice, III, 248.
- by methylcholanthrene, III, 147, 396, 823.
- by oestrogens, in guinea-pigs, III, 149.
- by tars from foods, III, 463.
- by ultra-violet light, in mice, III, 398.
- in rats, by lipin-carcinogens, III, 396.
- intracranial arterial hypertension in, III, 669.
- behaviour disorders associated with, in childhood, III, 587.
- blood sedimentation rate in, III, 508.
- Tumours, intramedullary, removal of, from spinal cord, III, 107.
- lesions in, multiple, malignant, III, 466.
- lithium in, in relation to slow neutron therapy, III, 151.
- liver-catalase activity in rats with, and effect of extirpation, III, 250, 615.
- lung. See under Lungs.
- lymph node. See under Lymph nodes.
- lympho-sarcoma group, supravital staining technique for, III, 826.
- malignancy recessions in, due to biotin deficiency, III, 697.
- malignant, action of yeast extract on, in mice, III, 402.
- growth and radiosensitivity of, effect on, of alcohol, chloroform, and ether, III, 535.
- of aluminium compounds, III, 325, 465.
- of colloidal lead, ultra-violet light, and glucose, III, 535.
- of vitamin-A, III, 151.
- transplanted, growth and radiosensitivity of, effect of aniline dye on, III, 465.
- mammary gland. See under Glands.
- mast cell. See Mastocytoma.
- metabolism of, in chickens, III, 402.
- mitosis in, technique for, III, 698.
- mouse, effect of X-rays on, III, 250.
- nerve. See under Nerves.
- nerve sheath. See under Nerves, sheaths.
- nerve sheath of orbit. See Neurilemmoma, orbital.
- nervous system. See under Nervous system.
- optic nerve. See under Nerves.
- ovary. See under Ovaries.
- pancreas. See under Pancreas.
- pituitary. See under Pituitary.
- protein fractions from, nitrogen and phosphorus in, III, 250.
- pulmonary. See under Lungs.
- racemose, mixed, from cervix of uterus, III, 325.
- radioactive phosphorus uptake by, III, 159.
- radiosensitivity of, III, 932.
- resistance to, induced, non-specific nature of, III, 248.
- retinal. See under Eyes, retina of.
- salivary gland. See under Glands.
- sex hormones in relation to, III, 249.
- skin. See under Skin.
- spinal cord. See under Spinal cord.
- spontaneous, homoio-transplantation of tumours in mice with, III, 615.
- in guinea-pigs, III, 824.
- suprasellar, related to pituitary pars intermedia, III, 809.
- tar, effect on, of lead preparations, in mice, III, 151.
- testicular. See under Testicles.
- tissues of, riboflavin of, III, 824.
- transplanted, anaphylaxis and haemorrhage in, III, 824.
- changes in field properties of mice with, III, 533.
- extra-chromosomal influence on, in relation to stock, in mice, III, 150.
- growth of, effect of visible light on, III, 534.
- uterus. See under Uterus.
- vulva. See under Vulva.
- Walker 256, glycogen in, III, 698.
- Wilms', III, 536.
- See also Adenoma, Cancer, Glioma, Sarcoma, etc.
- Tung nuts, toxicity of, III, 636.
- Tungsten, crystals, field emission from, pure and thoriated, I, 319.
- deviations from Schottky line for, I, 31.
- electrodeposition potential of, I, 268.
- radioactive, I, 256.
- sodium films on, secondary electron emission from, I, 311.
- thermal conductivity of, I, 15.
- thermal energy of, I, 226.
- thermal expansion of, I, 167.
- Tungsten alloys, with platinum, crystal structure of, I, 141.
- Tungsten boride, I, 406.
- oxide, formation of tungstates from, in solid state, I, 275.
- Metatungstic acid, structure, formation, and properties of, I, 22, 275.
- Tungsten organic compounds:—
- Metatungstic acid, complexes of tartaric acid and, I, 305.
- Tungsten determination:—
- determination of, by potentiometric titration, in presence of iron and vanadium, I, 376.
- Tungsten ores, belt deposits of, I, 347.
- manganese, at Golconda, Nevada, I, 218.
- Turbidimeters, photo-electric, I, 214.
- Turbidimetry, infra-red, I, 185.
- Turbidity, comparators for, I, 282.
- Turkeys, "blackhead" in, control of, III, 413.
- growth of, III, 404.
- organs and parts of, weights and measurements of, III, 322.
- short-spined, skeletal abnormalities of, III, 790.
- sinusitis in, III, 856.
- Turner's syndrome. See Infantilism, pterygo-nuchal.
- Turpentine oils, Indian, utilisation of, II, 59.
- Turtles, auricle of, anaerobic metabolism of, III, 331.
- breathing mechanism of, III, 670.
- Twigs, water in, effect of cutting on, III, 652.
- Twins, absence of frontal sinuses and bronchiectasis in, III, 185.
- binocular, syringomyelia and cervical ribs in, III, 882.
- dwarfed, height of, effect of gonadotropin on, III, 604.
- human, with peculiar relations to each other and chorion, III, 866.
- psychiatric-genealogical studies on, in mental deficiency schools, III, 19.
- representative series of, collection of, III, 5.
- syringomyelia in, III, 211.
- teratomas and ovarian dermoids in relation to, III, 403.
- Typhoid fever, diagnosis and treatment of, with antisera, III, 68.
- immunisation against, intradermal, III, 423.
- inoculation against, and its effect in serological diagnosis, III, 351.
- rural, epidemiology of, III, 423.
- treatment of, mandelic acid in, III, 545.
- with sulphaguanidine, III, 480, 627.
- vaccination against, III, 495.
- of Swiss soldiers, III, 560.
- vaccine, effect of, on cretin, III, 26.
- hyperpyrexia obtained with, III, 720.
- vi agglutinins in, in Rhodesian natives, III, 943.
- Typhus fever, complement fixation test for, III, 69.
- diagnosis of, III, 650.
- endemic, complement fixation in, III, 353.
- endemic and exanthematic, III, 353.
- epidemic, isolation of rickettsia from rat mites in, III, 497.
- therapy with hyperimmune antiserum from, III, 856.
- louse-borne, control of, in Great Britain, III, 650.
- susceptibility of Eastern cotton rats to, III, 720.
- virus, from chicken fleas, III, 69.
- Tyramine, action of, on stomach movements of rabbits, III, 708.
- destruction of, compared with angiotoxin and hydroxytyramine, by renal extracts, III, 374.
- hyperglycaemic action of, effect of X-rays on, in rabbits, III, 708.
- Tyramine, hydroxy-, destruction of, compared with angiotoxin and tyramine, by renal extracts, III, 374.
- Tyrosidine, *D*-amino-acids in, II, 41.
- chemistry of, II, 42.
- pharmacology and toxicology of, III, 629.
- Tyrosinase, activity of, effect on, of amino-benzoic acids, III, 172.
- effect on, of phenylthiourea, III, 935.

**Tyrosinase**, inactivation of, III, 418.  
 inhibitory action of, on vasoconstrictor effect of hypertension, III, 374.  
 preparations of, heat-inactivated, treatment with, of hypertension, III, 878.

**Tyrosine**, determination of, in edible Bengal fishes, III, 901.  
 oxidation of, by ultra-violet light, III, 845.  
 spectrum of, Raman, I, 289.

**Tyrosine**, fluoro-derivatives of, toxicity of, and their effect on metabolic rate in rats, III, 163.  
*di*iodo-, distribution of, in liver, muscle, and small intestine, III, 593.  
 formation of, by thyroid tissue, III, 887.  
 stability of solutions of, II, 311.  
 3:5-*di*iodo-, oxidation of, to thyroxine, II, 257.

**L-Tyrosine**, activity of phenolic hydroxyl of, II, 140.  
 physiological effect of, on pulsation of embryonic chick heart, III, 439.  
 rotation of, II, 225.

**Tyrosine**, effect of, on bacterial fibrinolysis and plasma coagulation, III, 648.  
 on *Streptococcus hemolyticus* in rhinopharynx of carriers, III, 707.  
 orally administered, III, 481.  
 hemolytic effect of, III, 481.  
 pharmacology and toxicology of, III, 629.  
 resistance to, of *Staphylococcus aureus*, III, 708.

U.

**Uca maracoani**, blood of, biochemistry of, III, 874.

**Uca pugnator**, eyestalk removal in, III, 323.

**Ulcers**, cinchophen, effect on, of antuitrin-S and posterior pituitary, III, 527.  
 corneal, from *B. pyocyaneus*, treatment of, with albucid soluble, III, 222.  
 treatment of, with sodium sulphacetamide, III, 767.

**decubitus**, treatment of, with sulphathiazole, III, 480.

**duodenal**, benzidine reaction in, III, 528.  
 bleeding, treatment of, prompt feeding in, III, 527.  
 results from, III, 527.  
 pathologic gastric physiology in, III, 817.  
 perforated, after metrazol therapy, III, 816.  
 gastric, after exposure to sulphur dioxide gas, III, 691.  
 benzidine reaction in, III, 528.  
 bleeding, treatment of, prompt feeding in, III, 527.  
 results from, III, 527.

**gastro-duodenal**, autopsy survey of, III, 30.  
 treatment of, with histidine, III, 143.

**gastrojejunal**, prevention of, by enterogastrone therapy, III, 816.

**intestinal**, due to X-rays, evolution of, III, 528.

**Mann-Williamson**, effect of urine extracts on, in relation to gastric secretory depressant in urine, III, 753.  
 survival time of dogs with, prolonged by amino-acid supplement in diet, III, 753.

**peptic**, and irritable colon, in army, III, 896.  
 bleeding, III, 894.  
 alimentary azotemia and, III, 241.  
 Meulengracht and Sippy therapies in, III, 392.  
 treatment of, III, 753.  
 prompt-feeding versus starvation in, III, 527.

**circulatory deficiencies** in, III, 392.  
 effect of urine extracts on, III, 392.  
 experimental, by autonomic disturbances and vasomotor episodes, III, 753.  
 hæmatemesis in, electrocardiograph changes after, III, 439.  
 in infancy and childhood, III, 816.  
 œsophageal, and cardiospasm, III, 894.  
 pathogenesis of, III, 527.  
 sex hormone-secreting endoerines in relation to, III, 392.

**Ulcers**, peptic, treatment of, III, 527.  
 alkalosis in, III, 753.  
 by injection, III, 316.  
 with aluminium hydroxide gel by naso-gastric drip, III, 527.  
 with hormonal preparations, III, 894.  
 without alkalis, III, 894.

**tropical**, in Trinidad, III, 642.

**Uleron**, neural lesions due to, III, 219.

**Ulothrix**, cell-wall structure in, III, 72.

**Ultrabasilite**, crystal structure of, I, 219.

**Ultracentrifugation**, alignment chart for, III, 656.

**Ultracentrifuges**, air-driven, I, 296.  
 analytical cell for, I, 251.

**Ultracolloids**. See under Colloids.

**Ultramicroscopes**. See under Microscopes.

**Ultrasonics**. See Waves, ultrasonic.

**Umbelliferone**, addition of cyanoacetamide to, and its methyl ether, II, 420.

**Undecane- $\beta$ -dione**, II, 300.

**Undecanophenylhydrazide**, II, 215.

**Undecenoxyloxyacetic acid**, ethyl ester, II, 311.

**N<sup>4</sup>-Undecenoylsulphanilamide**, II, 307.

**1-4 $\kappa$ -Undecenylcyclohexanol**, and its 3:5-dinitrobenzoate, II, 392.

**$\Delta^9$ -Undecenoic acid**, methyl ester, II, 393.

**Undecioic acid**,  $\kappa$ -bromo-, and  $\kappa$ -iodo-, and their methyl esters, II, 344.

$\omega$ -hydroxy-, viscosity of solutions of self-polyesters of, I, 143.

**n-Undecophenylhydrazide**, II, 215.

**p-n-Undecylbenzenesulphonamide**, II, 136.

**Undernutrition**. See Anorexia nervosa.

**Underwear**, resin-finished, dermatitis due to, III, 843.

**Undulant fever**, in children, III, 64.  
 with visual disturbances, III, 23.

**Units**, and dimensions, I, 317.

**Unsaponifiable matter**, III, 755, 799.

**Unsaturated compounds**, hydration of, I, 366, 371.  
 hydrogenation of, in the body, II, 17.  
 iodination of, II, 45.  
 spectra of, absorption, I, 225.  
 Raman, I, 133.  
 ultra-violet, I, 39.

**Unsaturation**, measurement of, by iodine absorption, II, 67.

**Uracil**, III, 248.

**Uræmia**, after crush injury, recovery from, III, 246.  
 blood-phenol levels in relation to, III, 611.  
 deoxycorticosterone pretreatment against, III, 121.  
 diagnosis of, microscopic, III, 875.  
 fatal, after exposure to carbon tetrachloride fumes, III, 927.  
 after pelvic injury, III, 460.  
 heart in, III, 801.

**Uraninite**, microgranular, from Japan, I, 123.

**Uranium**, bromine isotopes from fission of, I, 34.  
 iodine isotopes from fission of, I, 34.  
 nucleus, fission of, by neutrons, I, 350.  
 spontaneous fission of, I, 5.

**Uranium compounds**, in ox liver and spleen, III, 901.  
 nitrate, solubility of, I, 360.  
 oxides, electrical conductivity of, I, 137.  
 phosphide, structural analogies of, with thorium phosphide, I, 199.  
 phosphides, I, 210.

**Uranyl compounds**, fluorescence and Raman spectra of, I, 314.

**Uranium organic compounds**—  
 Uranyl aldimines, and their salts, extinction curves for, I, 385.

**Urea**, clearance of, calculation and nomogram of, III, 320.  
 in infants, III, 820.  
 maximum, effect of diet and meals on, III, 459.  
 determination of, in blood, apparatus for ammonia distillation in, III, 732.  
 using buffered absorbents, III, 952.  
 diffusion of, in tissues, III, 575.  
 effect of, in sulphonamide base, on skin wound healing in rabbits, III, 705.  
 on polarography of proteins, III, 846.

**Urea**, formation of, biologically, III, 703.  
 in fetal liver, kidney, and placenta in early pregnancy, III, 331.  
 in perfused rat liver, III, 529.  
 in blood. See under Blood.

**solution of**, concentrated, equilibrium between hemoglobin and oxygen in, III, 736.  
 value of, in protein synthesis in sheep, III, 759.  
 See also Carbamide.

**Urease**, effect on, of X-rays, III, 489.

**Urechis**, eggs of, respiratory pigment of, III, 256.

**Ureido-**. See Carbamido-

**Ureters**, spasms of, treatment of, with depropanex, III, 393.

**Urethane**, effect of, on bacterial growth, III, 779.

**Urethritis**, gonorrhoeal, treatment of, with sulphapyridine and sulphathiazole, III, 259.  
 with sulphonamides, III, 768.

*Trichomonas vaginalis*, treatment of, III, 629.

**Uric acid**, determination of, volumetrically, II, 212.  
 excretion of, effect of diet on, in children, III, 325.  
 metabolism of. See under Metabolism.

**Uricase**, purification of, III, 641.

**Urinary extracts**, antigenic power of, III, 857.  
 effect of, on Mann-Williamson ulcers in relation to gastric secretory depressant in urine, III, 753.

**Urinary tract**, in sulphonamide therapy, III, 336.  
 infections of, frequency and character of, III, 145.  
 sediment variation after pyridium administration in, III, 33.  
 treatment of, with sulphacetamide, III, 706.  
 with sulphathiazole, III, 546.

**sulphathiazole precipitation** in, after dosage, III, 260.

**Urine**, alkaptonuric, chemiluminescence of, III, 461.  
 androgens in. See under Androgens.  
 androgenic and oestrogenic activity of, in castrates and eunuchs, III, 690.  
 arsenic and lead in, with and without exposure to spray residues, III, 170.  
 ascorbic acid of, splitting of, III, 899.  
 calcium in, Sulkowitch test for, III, 695.  
 changes in, after exercise, III, 611.  
 colour reaction of, during labour, III, 321.  
 composition of, and blood, in relation to kidney function, III, 245.  
 concentration and dilution tests of, in adrenalectomised dogs, III, 899.  
 creatinine conversion into creatine in, III, 33.  
 crystals in, morphology of, during sulphonamide treatment, III, 840.  
 density of, effect of kidney damage on, in dogs, III, 460.  
 diastase of, in relation to abdominal disease, III, 895.  
 effect on, of anoxæmia and oxygen therapy, in nembutalised dog, III, 206.  
 excretion in, after irradiation, III, 56.  
 of ascorbic acid, after natural and synthetic vitamin intake, III, 763.  
 of fluorescent substances, effect of pyridine compound ingestion on, III, 471.

**extracts of**, anti-insulin effect of, III, 598.  
 flow of, effect of intestinal distension on, III, 242.  
 formation of, effect of hyper- and hypo-tonic salt solutions on, III, 531.

**gastric secretory depressant** in, III, 392.

**green pigment-producing compound** in, in pyridoxine deficiency, III, 762, 899.

**hemophilic and normal**, oestrogenic hormones in, III, 388.

**heparin** in, after injection, III, 145.

**human**, adrenotropic hormone from, assay and extraction of, III, 597.  
 carcinogenic fraction of, III, 248.

**iodine content of**, in New York City area, III, 322.

**lead in**, diurnal variation in, III, 145.

**mercury in**, III, 395.

**myohæmoglobin** in, after injury by crushing, III, 246.



**Urine**, nucleoprotein in, in relation to sex in mice, III, 461.  
 oestrogens in, III, 466.  
 oxalic acid in, III, 45.  
 pantothenic acid in, III, 471, 472.  
 post-partum, extraction and assay of lactogenic hormone in, III, 687.  
 potassium excretion in, effect of prostigmine on, III, 771.  
 pregnancy, augmentative gonadotropic effect of, on rats, III, 891.  
 determination in, of sodium pregnanediol glycuronide, III, 389.  
 effect of, on human gonadotropic hormones, III, 239.  
 effect of injection of, on ovaries, III, 313.  
 extracts of, effect of, on testis changes incident to cryptorchidism, III, 134.  
 hormonal action of, III, 526.  
 hormones in, effect of, on blood and bone marrow in anamia, III, 571.  
 gonadotropic, III, 134, 454.  
 sex, after castration, III, 236.  
 human, histidine isolation from, III, 611.  
 ketosteroid excretion of, in relation to fetus sex, III, 453.  
 allopregnan-3( $\beta$ )-ol-20-one isolation from, III, 455.  
 injection period and ovarian reaction to, III, 238.  
 recovery from, of hippuric acid, effect of salts on, III, 322.  
 secretion of, and membrane permeability, III, 246.  
 by dehydrated and normal infants, III, 898.  
 by premature infants, III, 532.  
 effect of pitressin on, III, 889.  
 pituitary oxytocic hormone and, III, 889.  
 selenium content of, III, 145.  
 sodium pregnanediol glycuronide in, in bulls, III, 389.  
 specific substances in, in leukaemia, III, 899.  
 spectroscopy of, III, 613.  
 steroids in, extractor for, III, 33.  
 neutral, fractionation of, III, 246.  
 S/N ratio and sulphur distribution in, on protein and non-protein diets, III, 703.  
 suppression of, due to sulphathiazole, III, 921.  
 surface-active substances of, adsorption of, during neoplasia, III, 37.  
 T.N.T. derivative in, test for, III, 415.  
 urobilinogen in, III, 461.  
 vitamin-A excretion in, III, 761.  
 vitamin-B<sub>1</sub> content of, III, 39.  
**Urine analysis** :—  
 detection in, of insulin, III, 611.  
 of 17-ketosteroids, colorimetrically, III, 380.  
 of sulphanilamide, sulphapyridine, and sulphathiazole crystals, III, 477.  
 of thyrotropin, III, 309.  
 determination in, of alkali, acidimetrically, III, 820.  
 of androgens, colorimetrically, III, 240.  
 of bromides, III, 864.  
 of cholesterol, III, 756.  
 of coproporphyrin, haematoporphyrin, as standard for, III, 899.  
 of cystine, polarographically, III, 322.  
 of diodrast, III, 428.  
 of glyoxalines, III, 246.  
 of gonadotropin, during menstrual cycle, III, 691.  
 in man, III, 604.  
 of indoxyl compounds, III, 694.  
 of inulin, III, 427.  
 of 17-ketosteroids, III, 504, 611.  
 of nitrates, III, 503.  
 of oestrogenic hormones, III, 311.  
 of riboflavin, fluorometrically, III, 254.  
 of steroids, colorimetrically, III, 611.  
 of thiamin, III, 321.  
 by fermentation, III, 93.  
**Urobilin**, from human fistula bile, III, 819.  
**d-Urobilin**, formation of, from mesobilirubinogen in human bile, III, 819.  
**Urobilinuria**, in haematoma, explanation of, III, 732.  
**Urobilinogen**, in faeces and urine, III, 461.

**Urodeles**, larvæ of, denervated non-regenerating limbs of, histology of, III, 791.  
 effect of transplanted blastemas on amputated nerveless limbs of, III, 431.  
 limbs of, morphology of denervation and amputation of, III, 726.  
 retina and lenticular regeneration in, III, 806.  
**Urogastrone**, chemistry and physiology of, III, 392.  
**Urogenital sinus**, embryonic, effect on, of sex hormones parenterally injected, III, 689.  
**Urogenital system**, effect on, of hormones in terrapins, III, 813.  
**Urography**, sodium iodide and diodrast use in, death after, III, 33.  
 subcutaneous, for children, III, 33.  
**Urolithiasis medicamentosa**, due to sulphapyrimidine, III, 546.  
**Urology**, sodium sulphathiazole in, III, 161.  
 treatment in, with sulphacetimide, III, 478.  
**Uroporphyrin**, isolation of, from faeces in porphyria, III, 43.  
**Uroselectan B** for labour induction, III, 314.  
**Ursolic acid**, non-toxicity of, III, 55.  
**Ursus arctos**, brain of, structure and function of, III, 517.  
**Urticaria**, atopic factor in, III, 499.  
 due to tryptasamide, III, 337.  
 induction of, by exposure to sunlight, III, 340.  
**Ursic acid**, constitution of, II, 29.  
**Uterus**, action on, of L-ascorbic acid, III, 911.  
 of oestrone, in guinea-pigs, III, 688.  
 adenocarcinoma of, after uterine polypoid, III, 141.  
 adenofibromyomata in. See under Adenofibromyomata.  
 adrenaline inactivation by, III, 120.  
 anatomical changes in, during labour and pregnancy, III, 525.  
 during pregnancy, in bovines, III, 454.  
 arterial changes in, in oophorectomised rats, III, 386.  
 aspiration of, in diagnosis, III, 140.  
 cancer of, after radium treatment of menopausal hæmorrhage, III, 152.  
 due to oestrogen treatment, III, 132.  
 ovarian involvement in, III, 617.  
 radical operation for, III, 325.  
 vaginal implantations in, III, 152.  
 capillary permeability in, effect of oestrogen on, III, 130.  
 cervix, cancer of, III, 467.  
 colloidal vanadate reaction in, III, 826.  
 influence of syphilis in, III, 536.  
 urological complications of, III, 321.  
 Wertheim's operation for, III, 617.  
 change in, with age in rats, III, 507.  
 erosion of, treatment of, with vitamin-A and -D, III, 312.  
 mucosa of, epithelial growths in, oestrogen, testosterone, and growth hormones in production of, III, 386.  
 change in, with age in rats, III, 507.  
 corpus luteum and follicle hormone action on, latent period of, III, 891.  
 cyclic variations in vascular architecture of, in guinea-pigs, hormonal analysis of, III, 385.  
 degenerative changes in, in E-avitaminotic rats, treatment of, with tocopherol acetate, III, 914.  
 diseases of, treatment of, with radium, effect of, on bladder wall, III, 486.  
 distension, effect of, on lactation, III, 138.  
 double, with pregnancy, III, 689.  
 effect on, of adrenaline in guinea-pigs, III, 634.  
 of anaesthetics and hormones, III, 235.  
 of  $\alpha$ - $\alpha$ -ethyl- $n$ -butyryl- $\epsilon$ -pentamethylene-biuret, III, 412.  
 of hormones in rhesus monkey, III, 600.  
 of iodised oil, III, 312.  
 of oestradiol overdosage on, in guinea-pigs, III, 130.  
 of raspberry leaf extract, III, 412.  
 enlarged, permanently, clinical and pathological study of, III, 892.

**Uterus**, epithelium of, metaplasia of, produced by oestrin administration in rats, III, 311.  
 fibroids of, III, 313.  
 fundus of, adenocarcinoma of, morphology of, III, 617.  
 glands of, morphology and stereography of, III, 235.  
 growth of, histology of, during pregnancy in rabbits, III, 868.  
 hæmorrhage in, after oestrone injection in spayed monkey, III, 131.  
 functional, III, 385.  
 treatment of, with pregnenolone, III, 602.  
 See also Menometrorrhagia.  
 induction of, by progesterone, III, 134.  
 human, contractions of, effect of emotional stress on, III, 139.  
 fat in, as indicator of progesterone activity, III, 602.  
 immature, intrinsic nerves of, III, 27.  
 insufflation of, and tubes, combined with hysterosalpingography, III, 140.  
 intravenous endometrial formations in, III, 140.  
 isolated effect on, of calcium and potassium ions, III, 28.  
 motility of, effect on, of lupin alkaloids, III, 165.  
 of short-wave mid-brain irradiation, III, 340.  
 patterns of, III, 751.  
 mucous membrane of, histochemical vitamin-C test in, III, 913.  
 muscle of. See under Muscle.  
 myometrial and endometrial activity of, effect of stilbæstrol on, in castrate women, III, 524.  
 potassium ion changes in, in Locke's solution, III, 313.  
 pregnant, behaviour of, in guinea-pigs, III, 236.  
 response of, to ergometrine, effect of oestrone and stilbæstrol on, in rabbits, III, 634.  
 saline extract from, toxicity of, during pregnancy and after hormone administration, III, 600.  
 sensitisation of, to placental extracts, effect of light on, III, 340.  
 tissue respiration of, effect of oestrogen on, in rats, III, 453.  
 tumours of, fibroid, III, 312.  
 functional activity of, III, 28.  
 vascular changes in, due to oestradiol benzoate and progesterone, in castrated rabbits, III, 132.  
**Uveitis**, associated with alopecia, deafness, polyosis, and vitiligo, III, 589.  
 posterior subcapsular opacities of lens after, III, 743.

## V.

**Vaccines**, T.A.B., treatment with, herpes labialis after, III, 259.  
 treatment with, of colitis, III, 243.  
**Vaccine virus**, constituents of, III, 353.  
 growth of, tissue cells in media for, III, 354.  
 inactivation of, by rays, III, 497.  
 infection by, relation of host cell to virus in, III, 353.  
 treatment of, with sulphanilamide, in rabbits, III, 545.  
 inoculation with, and variola virus, III, 497.  
 nucleoprotein antigen of, III, 856.  
 persistence of, in tissue cultures, III, 650.  
 structure of, III, 856.  
 virulence of, III, 353.  
**Vaccinia virus**. See Vaccine virus.  
**Vacua**, economising water usage by filter pumps for, I, 119.  
 high, valves for, I, 119.  
**Vagina**, change in, with age in rats, III, 507.  
 cyclic changes in, in rabbits, III, 234.  
 discharge from, III, 136.  
 effect on, of oestradiol and progesterone, in rats, III, 454.

- Vagina**, flora of, in children, III, 346.  
 mucosa of, epithelialisation of, in immature rabbit, III, 312.  
 epithelium of, in castrate rabbit, III, 312.  
 mucus of, pH of, in cows, III, 454.
- Vaginitis**, diagnosis of, in menopausal women, III, 454.  
 gonococcal, treatment of, III, 706.  
 in children in Bengal, III, 335.  
 with diethylstilboestrol, in children, III, 891.  
 treatment of, with oestrogenic vaginal suppositories, III, 601.  
 with silver picrate, III, 708.
- Vagus**, central course of, III, 300.  
**Vagus-postpituitary reflex**, III, 300.  
**Vagus-supraoptic tract**, III, 300.
- Valency**, formula for, I, 196, 228, 317.  
 in symmetrical XY<sub>2</sub> molecules, I, 317.  
 orientation and, I, 317.
- Valentinite**, California, I, 252.
- $\beta$ -Valeramidopropionic acid**,  $\beta$ - $\gamma'$ -hydroxy-, sodium salt, II, 250.
- n*-Valeric acid**, salts, electrolysis of, with nitrates, II, 277.
- Valerie acid**,  $\delta$ -bromo- and  $\delta$ -iodo-, and their methyl esters, II, 344.  
 $\alpha\delta$ -dibromo-, ethyl ester, II, 53.
- dl*-*n*-Valeric acid**,  $\alpha$ -3:5-dinitroamino-,  $\alpha$ -benzoyl derivative, II, 258.  
*iso*Valeric acid, lead diphenyl salt, II, 241.  
*iso*Valeric acid,  $\beta$ -hydroxy-, decarboxylation and dehydration of, I, 371.
- 3-Valeroyl-2-methylpyrrole-5-carboxylic acid**, ethyl ester, II, 207.
- n*-Valerphenylhydrazide**, II, 215.
- iso*Valerylacetic acid**, methyl ester, II, 300.
- 2-Valeryl-1-naphthols**, and their derivatives, II, 139.
- 3-*iso*Valerylpyrene**, II, 50.
- Valonia**, bioelectric potential and potassium effect of, III, 859.  
 cells, cellulose formation in, III, 278.  
 effect on, of nitrobenzene and benzene, III, 54.
- Valves**, high-vacuum, I, 119.  
 thermionic, conductivity and dielectric constant of electronic medium in, I, 191.
- Vanadates**. See under Vanadium.
- Vanadic acid**. See under Vanadium.
- Vanadium**, tervalent, kinetics of oxidation of, I, 177.
- Vanadium pentoxide**, reduction of, in acid solutions, I, 332.  
 phosphides, I, 329.  
 disilicide, crystal structure of, I, 390.
- Vanadic acid**, photochemical activity of, mixed with tartaric acid, I, 244, 273.  
 sols, induced circular dichroism in, I, 273.
- Vanadates**, I, 305.
- Vanadous sulphate**, use of, as reducing agent in analysis, I, 279.
- Vanadium determination**—  
 determination of, I, 377.  
 in presence of iron and titanium, I, 73.  
 with salicylaldehyde, I, 73.
- Vanillic acid**, metabolism of. See under Metabolism.
- Vanillin**, from lignin, and its determination, II, 314.  
 metabolism of. See under Metabolism.  
 $\delta$ -*p*-nitrophenylsemicarbazone, II, 169.  
 oxidation of, and of lignin, II, 431.
- o*-Vanillin**, reduction of, catalytic, II, 358.
- iso*Vanillin**, reduction of, catalytic, II, 358.
- Vanilloyl methyl ketone**, II, 42.
- o*-Vanillyl alcohol**, II, 358.
- iso*Vanillyl alcohol**, II, 358.
- Vaporisation**, tension of, and sublimation, I, 357.
- Vapours**, adsorption of, by crystalline surfaces, I, 324.  
 analysis of, chromatographic adsorption, I, 374.  
 autosorption at boundaries of liquids and, I, 202.  
 condensation of, in carrier gases, I, 168.  
 pressure-temperature chart for, I, 167.  
 viscosity of, Höppler viscosimeter for, I, 292.  
 See also Gases.
- Vapour pressure**, curve for, I, 139.  
 measurement of, thermo-electrically, I, 282.  
 of aqueous solutions, at high temperatures, I, 293.  
 of binary liquid mixtures, I, 90.  
 of gases, apparatus for measurement of, II, 243.  
 of monatomic vapours, I, 233.  
 of saturated aqueous solutions, I, 141.  
 of unsaturated hydrocarbons, I, 357.  
 study of, I, 24.
- Varicella**, lesions from, III, 354.
- Varicose veins**. See under Veins.
- Variola virus**, inoculation with, and vaccinia virus, III, 497.
- Variscite**, nodules, Fairfield, Utah, I, 380.
- Vas deferens**, transplanted, effect of sex hormones on, III, 893.
- Vascular disease**. See under Diseases.
- Vasography**, III, 204.  
 experimental, macro- and micro-röntgenography in, III, 802.
- Vasopressin**, action of, on ovulation in fowls, III, 810.
- Vasospasm**, focal cerebral ischaemia and, III, 674.
- Veddahs**, of Ceylon, physical anthropology of, III, 285.
- Vegetables**, carotene in, vitamin-A value of, III, 253.  
 dehydrated, determination in, of water, III, 951.  
 determination in, of carbon dioxide and organic volatiles, III, 950.  
 of  $\beta$ -carotene, III, 699.  
 nicotinamide content of, III, 762.  
 root, as antiscorbutics in infant feeding, III, 255.
- Veins**, abnormal system of, in frogs, III, 725.  
 azygos-hemiazygos, anomalous, associated with retroaortic left renal and accessory renal veins, III, 865.  
 portal, occlusion of, III, 580.  
 pressure in, in man, III, 876.  
 pulmonary, drainage of, into right side of heart, III, 658.  
 into superior vena cava, III, 725.  
 spinal, anatomy of, III, 300.  
 throttling, in liver, III, 77.  
 varicose, blood pooling in, dizziness, dyspnoea, and precordial distress due to, III, 802.  
 treatment of, with monolate, III, 441.  
 vertebral, rôle of, in metastatic processes, III, 826.
- Velocity of polymerisation**, I, 242.  
 chain, I, 332.
- Velocity of reaction**, I, 368.  
 at low temperatures, I, 104.  
 at phase boundaries of solids, I, 301.  
 calculation of, I, 368.  
 coefficient of, I, 368.  
 effect of concentration on equilibrium and, I, 207.  
 effect of solvent on, I, 177.  
 equations for, I, 242.  
 in heterogeneous liquid-liquid systems, I, 332.  
 in organic liquid systems, II, 185.  
 ionic, solvent effects in, I, 401.  
 relation of, to affinity, I, 370.  
 to affinity and molecular structure, I, 332.  
 surface conditions of precipitates and, I, 105.  
 thermodynamics and, I, 331.
- Vena cava**, hepatic portion of, absence of, with bilateral retention of supracardinal system, III, 430.  
 superior, situs inversus of, III, 430.
- Venesection**, treatment by, and phenylhydrazine, of aortic aneurysm, III, 513.
- Venom**. See Poisons.
- Ventriculometry**, III, 741.
- Venus**, formaldehyde in atmosphere of, I, 193.  
 spectrum of rays from, carbon dioxide in, I, 224.
- Venus mercenaria**, heart of, acetylcholine and nervous inhibition in, III, 201.
- Veratral- $\epsilon$ -arsinic acid**, II, 291.
- Veratraldehyde**, 6-bromo-, -chloro-, and -iodo-, bromoamino- and bromonitro-derivatives, and their derivatives, II, 405.
- Veratric acid**, *mono*- and *di*-bromo-bromoamino-, and bromonitro-derivatives, II, 405.
- Veratrine**, action of, on heart in mammals, III, 709.
- Veratrine alkaloids**, II, 40, 240.
- Veratrole-4-sulphondimethylamide**, II, 140.
- Veratrum viride**, alkaloids of, and their toxicity to cockroaches, III, 723.
- 3-Veratrylidene-1-methyloxindole**, 3- $\delta'$ -amino-, and its acetyl derivative, II, 331.
- Veratrylideneoxindole**, 6-amino-, and its diacetyl derivative, and 6-nitro-, II, 331.
- Verbanol**, *dl*-amino-, and its derivatives, II, 147.
- Verbanolcarboxylic acid**, II, 148.
- Verbanone**, *dl*-bromo-, and *dl*-chloro-, II, 147.
- Verbanonecarboxylic acid**, II, 147.
- Verbenalin**, II, 81.
- Vermiculite**, relation of hydrobiotite and, I, 219.  
 sorption by, of water vapour, I, 263.
- Vernalisation**, photoperiodic induction and, III, 72, 861.
- Vertebrae**, dorsal and lumbar, spina bifida occulta of, III, 506.  
 hæmangioma of, associated with compression of cord, treatment of, with rays, III, 699.  
 lumbar and sacral, congenital absence of, III, 79.  
 See also Spinal column.
- Vertebrates**, growth and phylogeny of, III, 2.  
 lower, gastric digestion in, III, 241.
- Vertigo**, due to effort at visual attention in brain disease, III, 884.  
 in relation to otolaryngology, III, 592.  
 neurology of, III, 592.  
 ocular, III, 592.
- Vestibular function**, new findings in, III, 303.  
 unconscious, III, 303.
- Vetivazulene**, synthesis of, II, 417.
- Vetivones**, III, 371.
- Vibration**, sensation of, III, 743.
- Vibrios**, differentiation between species of, III, 649.
- Vibrio cholerae**, effect on, of sulphonamides, III, 768.
- Viburnum prunifolium**, uterine principle from, III, 842.
- Vicia faba**, seeds, proteins in, III, 501.
- Vinbarbital sodium**. See Delvinal sodium.
- Vincent's disease**, treatment of, with fuadin, III, 707.
- Vinyl alcohols**, II, 92.
- Vinyl compounds**, polymerisation of, effect of hydrogen acceptors on, II, 304.  
 cyanide. See Acrylonitrile.  
 derivatives, spectra of, Raman, I, 83.  
 groups, substituted introduction of, II, 130.
- $\Delta^4$ -17-Vinylandrostene**, 3 $\beta$ :17 $\beta$ -dihydroxy-, and its acetate, II, 268.
- 4-Vinyldeuteroporphylin**, dimethyl ester, II, 382.
- Vinylene groups**, properties of, effect of substitution on, I, 225.
- 1-Vinylcyclohexan-1-ol**, II, 268.
- 2-Vinylnaphthalene**, 2- $\alpha$ -bromo-, and 2- $\alpha$ -nitro-, II, 399.
- 9-Vinylphenanthrenes**, II, 168.
- 2-Vinylthiophen**, II, 179.
- Vinylneoxanthobilirubin acid**, synthesis of, II, 427.
- Violets**, substances with odour of, II, 99, 200, 233.
- Violic acid**, use of, in chromatographic adsorption, I, 334.
- Vipera berus**, branchial arch arteries in, nerve supply of, III, 429.  
 Jacobson's organ and its innervation in, III, 77.
- Vipera russellii**, venom of, neutralisation of, by homologous antiserum, III, 872.
- Virilism**, adrenal, 17-ketosteroid excretion in, III, 746.  
 adrenal cortex in relation to, III, 307.  
 due to tumour of ovary, III, 759.  
 in adrenal cortex cancer, III, 382.  
 pregnandiol excretion in women with, III, 29.

- Viruses**, chorio-allantoic lesions from, stained with trypan-blue, III, 560.  
entry of, into nervous system from blood, III, 943.  
fibroma, and myxoma, relation between, in rabbits, III, 324.  
formation of, autocatalytically, III, 943.  
"masked." See Papilloma virus, Shope.  
propagation of, serum ultrafiltrate for study of, III, 728.  
sedimentation of particles of, capillary cell for measuring, III, 354.  
tumour-inducing, infection of chickens and ducks with, III, 903.
- Virus diseases**. See under Diseases.
- Viscera**, afferent impulses from, III, 804.  
chlorin-e-rhodin-g accumulation and elimination in, III, 479.  
vagi and parasympathetic ganglion cells of, origin of, in chicks, III, 506.  
weight of, effect on, of oestrone and prolactin, in cockerels, III, 600.
- Viscose films**, electron-micrographs of, I, 290.
- Viscosimeters**, I, 378.  
capillary pipette-type, I, 412.  
Höppler, for gases and vapours, I, 292.  
rotary, I, 282.  
sintered-glass filters for tubes for, I, 282.  
vibrograph for, I, 282.
- Viscosimetry**, history of, I, 343.
- Viscosity**, constitution and, I, 388.  
expression for, I, 326.  
measurement of, I, 412.  
at high stresses and defined rates of shear, I, 96.  
of air, I, 168.  
of associated liquids and binary mixed liquids, I, 168.  
of binary liquid mixtures, I, 90.  
of binary mixed gases, I, 322.  
of biological fluids, III, 263.  
of chain polymerides, I, 237.  
of colloidal solutions, I, 326.  
of hydrophilic colloids, I, 326.  
of liquids, I, 51.  
and constitution, I, 89.  
and mol. wt., I, 293.  
and sound velocity, I, 392.  
and surface tension, I, 357.  
and temperature, I, 50, 233, 357.  
in homologous series, I, 322.  
organic, I, 89.  
theory of, I, 140.  
of macromolecular compounds, I, 364.  
of solutions and suspensions, I, 16, 168.  
Stokes', relation of supersonic absorption and, I, 292.
- Viscous-elastic continua**, structure mechanics of, I, 293.
- Viscous materials**, viscosity and concentration of emulsions of, I, 296.
- Vision**, acuity of, improvement of, by contact glasses, III, 222.  
binocular, effects of, III, 221.  
tests of, III, 677.  
colour, measurement of, III, 590.  
of insects, III, 448.  
review of, III, 681.  
theory of, III, 806, 807.  
disorientation of, due to cerebral lesions, III, 302, 520.  
effect of alcohol on, III, 380.  
energy at threshold of, III, 304.  
homonymous field of, effect on, of corpus callosum section, III, 212.  
illusions in, study of, III, 886.  
in diabetes, III, 590.  
mechanisms of, III, 225.  
night, Harman's test for, III, 743.  
testing of, III, 224.  
quantum relations of, III, 590.  
stereoscopic, in industry, III, 886.  
threshold of, in relation to optic cortex in cat and man, III, 681.  
trichromatic theory of, experiments on, III, 886.
- Vision**. See also Eyes.
- Visual cortex**, cells of Meynert in, in monkeys, III, 739.
- Vital capacity**, effect on, of swift ascent to altitudes, III, 879.
- Vitamer-A**, modified, III, 761.
- Vitamins**, III, 760.  
action of, on nervous centres, III, 907.  
adrenals in relation to, III, 760.  
analysis of, III, 908.  
anticanceric, III, 155.  
antirachitic, synthesis of, II, 304, 317, 353, 359.  
chemistry of, III, 538, 828.  
chemistry and physiology of, III, 724.  
deficiency of, diagnosis and treatment of, III, 538.  
effect of zinc chloride poisoning on, in rats, III, 327.  
eye diseases due to, in Trinidad, III, 221.  
mouth ulceration in pregnancy due to, III, 327.  
oral manifestations of, III, 699.  
syndrome of, III, 153.  
ear and, III, 225.  
ear, eye, nose, throat, and, III, 221.  
fat-soluble, III, 541.  
foods and, III, 760.  
grass, III, 619.  
in animal nutrition, III, 405.  
in surgery, III, 538.  
in workmen, III, 828.  
meat, III, 564.  
methods with, III, 622.  
milk, increase of, after nicotinamide ingestion in women, III, 905.  
role of, in pathology and physiology of metabolism, III, 907.  
treatment with, and stilboestrol, of menopausal symptoms, III, 524.  
high, in hyperemesis gravidarum, III, 454.  
in ophthalmology, III, 676.  
medical aspects of, III, 537.  
of cheilosis, III, 471.  
of muscular dystrophy, III, 804.  
of neuropsychiatric disorders, III, 538.  
tumour-growth prevention by injection of, III, 698.  
See also Avitaminosis, Diet, Nutrition, etc.
- Vitamin-A**, III, 405.  
absorption of, III, 327.  
concentration by, III, 38.  
and immunity to *Strongyloides*, III, 328.  
application of, III, 38.  
biologically active carotenoids and, III, 327.  
content of, in shark liver-oil, III, 619.  
dark adaptation in relation to, III, 114, 223, 886.  
deficiency of, blood plasma-vitamin-A concentration and dark adaptation as criterion of, III, 24.  
blood-vitamin-A level as index of, in infants and children, III, 538.  
 $\beta$ -carotene absorption by rats with, III, 699.  
detection of, by biomicroscopy, III, 700.  
effect of, on bacterial flora in rats, III, 583.  
on gastric function, III, 240.  
on nervous system, III, 212.  
experimental, in man, III, 538.  
gastro-papillomatosis from, III, 252.  
in ruminants, III, 538.  
incisor changes in, in rats, III, 79.  
lesions due to, and their treatment, III, 908.  
skin pigmentation due to, III, 829.  
determination of, carotenoids in, III, 153.  
in faeces, III, 457.  
in fish oils, spectrophotometrically, III, 253.  
dietary levels of, in relation to dark adaptation in children, III, 829.  
distribution changes of, in choline deficiency, III, 619.  
distribution of, histological, in liver specimens, III, 144.  
in body, III, 539.  
in liver damage, III, 908.  
effect of, on growth and radiosensitivity of tumours, III, 151.  
on immunological reactions in man, III, 538.
- Vitamin-A**, effect on, of alcohol, dibenzanthracene, and other agents, in rats, III, 469.  
excretion of, by man, III, 700.  
hepatic, return of, after depletion by methyl-cholanthrene in rats, III, 469.  
in blood. See under Blood.  
in liver. See under Liver.  
in urine. See under Urine.  
materials containing, spectrography of, III, 253.  
metabolism of. See under Metabolism.  
physiological value of, compared with carotene, III, 469.  
plasma-. See under Blood-plasma.  
relation of, to blood level and adaptation to dim light, III, 380.  
to vitamin-E, III, 908.  
requirements of, fed as carotene, for chickens, III, 327.  
seasonal fluctuation of, in Palestinian milks, III, 153.  
storage site of, in liver, III, 38.  
substitutes for, carotene preparations as, III, 327.  
treatment with, and vitamin-D, of cervix erosion of uterus, III, 312.  
of colour-blindness, III, 743.  
of dermatoses, III, 538.  
of nummular eczema, III, 327.  
ultra-violet absorption of, III, 700.  
See also Carotene.
- Vitamin-A<sub>1</sub>**, differentiation between, and vitamin-A<sub>2</sub>, by fluorescence microscopy, III, 253.
- Vitamin-A<sub>2</sub>**, II, 185.  
differentiation between, and vitamin-A<sub>1</sub>, by fluorescence microscopy, III, 253.
- Vitamin-B**, assay of six, microbiologically, using *Lactobacillus casei*, III, 761.  
complex, constituents of, influence of, on recovery from fatigue, III, 908.  
deficiency of, as cause of neuritis in chronic alcoholic and pipe smoker, III, 304.  
effect of, on behaviour of experimental animals, III, 700.  
on gastro-intestinal tract motility, III, 894.  
on mice and rats, III, 908.  
on wound healing, III, 908.  
ocular effect of, III, 221.  
effect of, on growth and deficiency in rats, III, 830.  
on neural disturbances in treated anaemia, III, 191.  
filtrate fraction of, effect of imbalance of, in dogs, III, 155.  
new factor of, requirement of, for mice, III, 471.  
preparations of, evaluation of, III, 761.  
syrup, effect of, on cardiovascular system in pregnancy, III, 441.  
use of, in relation to oestrogens, III, 620.  
deficiency of, and nervous disease, III, 586.  
effect of, on small intestine, III, 393.  
mental changes in, III, 448.  
effect of, on intestinal peristalsis, III, 154.  
fat metabolism and, III, 829.  
filtrate factors, deficiency of, effect of sodium chloride on rats with, III, 40.  
treatment with, in old age, III, 469.  
of Raynaud's disease, III, 373.
- Vitamin-B<sub>1</sub>**, analogues and homologues of, anti-neuritic activity of, III, 154, 909.  
as supplement to pigeon's diet, III, 830.  
bacterial oxidation and, III, 645.  
content of, in urine, III, 39.  
deficiency of, adrenal steroid concentration changes in, in dogs, III, 121.  
adrenal weight changes in, III, 119.  
beri-beri symptoms in, III, 406.  
effect of, on gastric function, III, 240.  
on reproduction in rats, III, 539.  
in breast-fed infants, III, 539.  
myocardial dysfunction due to, III, 578.  
optic nerve lesions in, III, 682.  
oxygen consumption in, in rats, III, 909.  
pyruvic acid test for, in children, III, 700.  
determination of, III, 39, 504, 830.

- Vitamin-B<sub>1</sub>**, determination of, biologically, III, 39, 830.  
 by its effect on vaginal contents of rat, III, 39.  
 by thiochrome, III, 254, 470.  
 fluorophotometers in, III, 620.  
 by yeast fermentation, III, 406.  
 in National wholemeal, III, 620.  
 in white flour, III, 470.  
 spectrophotometrically, III, 406.  
 effect of, on plants and their cuttings, III, 861.  
 on postdiphtheritic paralysis, III, 19.  
 effect of protein-rich diets on rats deprived of, III, 328.  
 function of, in cellular metabolism, III, 253.  
 inactivation of, by raw fish, III, 470.  
 low intake of, adaptation to, III, 253.  
 treatment with, of heart disease, III, 700.  
 urinary content of, in postdiphtheric paresis, III, 700.  
 See also Aneurin, and Thiamin.
- Vitamin-B<sub>2</sub>**, complex, constituents of, III, 328.  
 cytophysiology of, and its derivatives, III, 406.  
 deficiency of, effect of, on pregnancy, III, 313.  
 red staining of paws and whiskers in rats with, after dehydration, III, 831.  
 effect of, on glucose utilisation by living cell during respiration, III, 620.  
 milk as source of, III, 471.  
 treatment with, of glossitis, III, 909.  
 See also Flavin, Lactoflavin, and Riboflavin.
- Vitamin-B<sub>6</sub>**, chemistry of, II, 30.  
 and its polymerides, II, 180.  
 deficiency of, experimental, III, 407.  
 lesions in rats from, III, 762.  
 See also Acrodynia.  
 determination of, colorimetrically, III, 407.  
 effect of, on blood and bone marrow in anaemia, III, 571.  
 metabolism of. See under Metabolism.  
 treatment with, of muscular dystrophy in children, III, 671.  
 of muscular dystrophy and motor neurone disease, III, 211.  
 of neuromuscular diseases, III, 105.  
 of paralysis agitans, III, 378.  
 See also Pyridoxine.
- Vitamin-C**, arsenical sensitivity and, III, 634.  
 blackcurrant purée as source of, III, 329.  
 deficiency of, effect of, on action of barbiturates, III, 550.  
 in Bukarest school children, III, 407.  
 in relation to anaemia, III, 621.  
 in South African native, III, 763.  
 detection of, histochemically, III, 702.  
 in epithelium of choroidal plexus, III, 329.  
 in medical students, III, 912.  
 determination of, III, 540.  
 in blood, III, 702.  
 in cabbage juice, III, 912.  
 in plasma, III, 156.  
 potentiometrically, III, 622.  
 use of bacteria in, III, 329.  
 with 2:6-dichlorophenol-indophenol, III, 622.  
 detoxifying action of, in arsenical therapy, III, 711.  
 during pregnancy and puerperium, III, 136.  
 effect of, on cancer in mice, III, 325.  
 on dental caries in calcified teeth, III, 763.  
 on growth of micro-organisms, III, 717.  
 on health and infection resistance in institution, III, 621.  
 on immunological reactions in man, III, 538.  
 on scurvy development, III, 255.  
 on tuberculous guinea-pigs, III, 155.  
 excretion of, III, 622.  
 from green tomatoes, III, 912.  
 function and requirements of, III, 472.  
 hypovitaminosis in relation to, III, 701.  
 in cerebrospinal fluid, in obstetrics and gynaecology, III, 329.  
 level of, III, 21.  
 seasonal variations in, in infants, III, 702.
- Vitamin-C**, in nutrition in tuberculosis, III, 911.  
 in plasma, effect of hyperthermia on, III, 370.  
 in rose hips, III, 912.  
 in walnuts, III, 763.  
 ingestion of, plasma-ascorbic acid increase after, III, 832.  
 kohlraubi as source of, III, 763.  
 lack of, effect of, on labour, III, 238.  
 level of, effect of, on barbiturate depression in guinea-pigs, III, 472.  
 in school-children and students in wartime, III, 912.  
 saturation tests for, III, 912.  
 metabolism of. See under Metabolism.  
 oxidation of, III, 255.  
 oxidation and reduction of, III, 622.  
 parsley as source of, III, 702.  
 seasonal fluctuation of, in Palestinian milks, III, 153.  
 synthesis of, in infant, III, 710.  
 treatment with, in old age, III, 469.  
 See also Ascorbic acid.
- Vitamin-D**, action of, in ossification, III, 540.  
 on liver cells, III, 458.  
 on prothrombin deficiency in rats, III, 664.  
 content of, in English butter fat, III, 764.  
 determination of, III, 156.  
 chick method for, III, 473.  
 spectrographically, III, 764.  
 use of toes rather than tibiae in, in chicks, III, 833.  
 with radioactive strontium, III, 764.  
 from yeast, III, 778.  
 in serum. See under Blood-serum.  
 prevention with, of dental caries, III, 540.  
 requirement of, lucerne hay and winter sunshine as substitute for, for pigs, III, 913.  
 structure of, and light absorption of its isomerides, II, 280.  
 treatment with, III, 540.  
 and vitamin-A, of cervix erosion of uterus, III, 312.  
 of calcium appetite of parathyroidectomised rats, III, 306.  
 of infectious arthritis, III, 913.  
 of rachitic bones, in rats, III, 41.
- Vitamin-D<sub>2</sub>**, effect of, on calcium and phosphorus metabolism, III, 330.
- Vitamin-E**, II, 234, 326; III, 421, 554.  
 action of, III, 407.  
 on blood-cholesterol and -fatty acids of male schizophrenics, III, 473.  
 biological rôle of, III, 473.  
 chemistry of, II, 326.  
 deficiency of, effect of, on thyroid and basal metabolism of rats, III, 744.  
 enamel organ atrophy in rats' incisor in, III, 764.  
 nervous system and muscle changes in, in rats, III, 156.  
 nutritional disorders due to, in laboratory animals, III, 473.  
 determination of, III, 156.  
 tested on Chinese drugs, III, 330.  
 lack of, effect of, on choline-esterase activity, III, 914.  
 relation of, to vitamin-A, III, 908.  
 treatment with, of fibrositis, III, 376.  
 of muscular atrophy, III, 583.  
 of muscular dystrophy and motor neurone disease, III, 211.  
 of neuromuscular diseases, III, 105.  
 See also Tocopherols.
- Vitamin-H**. See Benzoic acid, *p*-amino-.
- Vitamin-K**, III, 541.  
 analogues of, clinical use of, III, 369.  
 chemistry of, III, 473.  
 deficiency of, III, 437.  
 treatment of, percutaneously, III, 194.  
 derivative of, synthetic, effect of, on turtle blood coagulation, III, 91.  
 determination of, colorimetrically, III, 702.  
 effect of, on bleeding time in thrombocytopenia, III, 292.  
 on erythrocyte agglutination, III, 90.  
 on liver function, III, 394.
- Vitamin-K**, effect of, on prothrombin deficiency in bile-fistula dog, III, 702.  
 intravenous use of, III, 194.  
 requirement of, for newborn, III, 9.  
 storage of, in egg-white, and its effect on prothrombin levels in chicks, III, 9.  
 prothrombin in relation to, III, 9.  
 synthetic. See 2-Methyl-1-naphthol, 4-amino-  
 treatment with, III, 369.  
 in obstetrics, III, 664.  
 of diseases other than hæmorrhagic, III, 473.  
 of hæmorrhagic disease in newborn, III, 292.  
 of jaundice, III, 9.  
 See also Menadione.
- Vitamin-L<sub>1</sub>**, in saké yeast, deficiency of, III, 765.
- Vitamin-L<sub>2</sub>**, deficiency of, prevention of, by dextrin diet, III, 765.
- Vitamin-P**, activity of, determination of, biologically, III, 913.  
 biological test for, III, 765.  
 deficiency of, III, 702.  
 hesperidin as source of, III, 474.  
 in blackcurrants, III, 913.  
 treatment with, of oedema of pregnancy toxæmia, III, 330.
- Vivianite**, crystal structure of, I, 199.
- Vocal cords**, false and true, removal of, in dogs, III, 951.
- Vogt's disease**, III, 17.
- Volatility of organic compounds**, I, 357.
- Volts**, electronic, I, 117.
- Volume**, changes of, on mixing solutions, I, 358.  
 molecular, of ions in aqueous solutions, I, 234.  
 of liquid alkanes, I, 353.  
 recording small changes of, III, 182.  
 small, determination of, with McLeod gauges, I, 159.  
 specific, additivity of specific weight and, I, 51.
- isoVomicidine**, II, 385.
- isoVomicine**, and its derivatives, II, 385.
- Vomipyrine**, II, 40.
- Vulva**, apocrine sweat gland cancer of, III, 536.  
 cancer of, prevention of, III, 403.  
 tumour of, III, 617.
- Vulvitis**, ulcerative, cyclical, treatment of, and stomatitis, with hormones, III, 232.
- Vulvovaginitis**, gonorrhœal, treatment of, with oestrogens, III, 890.  
 trichomonas, diagnosis of, III, 141.
- Vulvovagino-cervical eruption**, due to gold sodium thiosulphate therapy, III, 843.

W.

**Walking**, synergic muscle activity during, in man, III, 299.

**Walnuts**, vitamin-C in, III, 763.

**Warfare**, chemical, materials for, I, 401.

medical aspects of, III, 928.  
 defence, industrial hygiene in, III, 338.  
 nutrition and, III, 467.

**Washing apparatus** for solutions in organic solvents, I, 250.

**Water**, absorption of, from intestine, and its distribution in the organism, III, 692.  
 action of rays on, I, 373.

adsorption at interfaces of, with air or organic liquids, I, 54.

adsorption of, on glass plates, I, 170.

bacteriology of, III, 63.

balance of, III, 916.

therapeutic problems in, III, 369.

body-, distribution of, after hæmorrhage, III, 575.

measurement of, use of sulphanilamide in, in dogs, III, 874.

deep, Perly, Geneva, composition of, I, 379.

density of deuterium oxide and, I, 89.

electrical conductivity of, effect of dissolved gases on, I, 146.

electro-reduction of, at dropping mercury electrodes in concentrated salt solutions, I, 303.

fresh, bacteriology of, III, 269.

ground, flow pattern of, I, 344.

motion of, I, 215.

Water, hot, of Steamboat Springs, Nevada, mineral deposition from, I, 215.  
 intoxication of frogs by, rôle of pituitary in, III, 747.  
 irradiation of, with X-rays,  $p_H$  changes in, I, 209.  
 lake, English, bacteria in, III, 63.  
 mirabilite, Ansh-Bulat, I, 120.  
 latent heat of, I, 356.  
 metabolic, and desiccation, III, 767.  
 mineral, Kinkel, in Totigi province, I, 120.  
 Saratoga, origin of, I, 120.  
 trace elements in, I, 215.  
 Surangudi, Tinnivelly District, S. India, I, 120.  
 polarography of, for surface-active substances, I, 242.  
 X-ray diffraction of, effect of flow on, I, 233.  
 reaction between zeolites and substances sparingly soluble in, I, 110.  
 refractive index of, in near infra-red, I, 133.  
 Rio Nágima basin, Spain, I, 283.  
 saline, Sturgeon River gold mines, I, 160.  
 sea, changes in, during storage, I, 160.  
 deep, deuterium oxide content of, I, 344.  
 determination in, of iodine, I, 338.  
 growth of micro-organisms in media containing, III, 420.  
 nitrate-free, III, 500.  
 nitrites in, I, 343.  
 Scotian shelf, I, 283.  
 tropical, solubility of calcium carbonate in, I, 169.  
 White Sea, iodine content of, I, 343.  
 solubility of, in fatty acids, I, 359.  
 spreading of oils on, I, 94, 95.  
 thickness of films of, on quartz, I, 19.  
 transfusion of, magnetic stirrer for, I, 28.  
 treatment of, ion exchange in, I, 110.  
 vapour, sorption of, by vermiculite and its silica, I, 263.  
 See also Ice, and Steam.

Water analysis :—  
 determination of, in animals and plants, III, 360, 426, 427.  
 in aquo-complex compounds, I, 338.  
 in biological material, III, 427.  
 in blood, III, 437.  
 in living tissues, III, 951.  
 in organic compounds insoluble in water, II, 388.

Water-bath, laboratory, III, 280.

Water-bottle, for caged animals, III, 183.

Water of crystallisation, determination of, of salts, I, 338.

spectra of, absorption, infra-red, I, 287.

Waves, plane, two, non-linear electro-dynamics of, I, 5.

short, biological effects of, III, 340.

supersonic, absorption of, by gases and liquids, I, 140.  
 relation of Stokes' viscosity and, I, 292.  
 dispersion of, in gases, I, 261.  
 production of dispersions with, I, 56.  
 ultra-short, biochemical effect of, III, 56.  
 dispersion of, in polar liquids, I, 353.  
 treatment with, of lactation, III, 315.

ultrasonic, absorption of, in liquids, I, 14, 232.  
 dispersion and fracture velocity of, in solids, I, 14.  
 oxidation by, I, 209.  
 propagation of, in liquid mixtures, I, 201.  
 velocity of, in carbon dioxide, I, 232.

Wave mechanics, I, 224.

Wax, bee's, yellow pigment of, origin of, III, 248.  
 vegetable, from Piauí coast, III, 563.

Wax-resin compositions for moulage-making, III, 788.

Weasel, long-tailed. See *Mustela frenata*.  
 short-tailed. See *Mustela cicognani*.

Weber-Dimitri disease, III, 111.

Weighing, simple method of, I, 187.

Weight, loss of, insensible, calculation of heat production from, III, 834.  
 specific, additivity of specific volume and, I, 51.

Weights, ionic, of dissolved substances, I, 118, 294.  
 molecular. See Molecular weights.

Weil's disease, III, 349, 458.

Weinschenkite, crystal structure of, and gypsum, I, 319.

Welding, in closed cooking, fatality from, III, 262.

Werner's syndrome, III, 322.

Wetting, relation of, to adsorption and spreading pressure, I, 360.

Wetting agents, effect of, on electro-organic reductions, I, 175.  
 thickness of films of, I, 95.

Whale, humpback. See *Megaptera nodosa*.  
 meat of, value of, in chick diet, III, 468.

Whale-liver oil, spectra of, absorption, III, 761.

Wheat, germinating, amylase in, effect of temperature on, III, 653.  
 germination of, III, 562.  
 sulphur protein from, III, 722.

W. Canadian, protein in, in relation to rainfall, III, 653.

Wheat plants, effect on, of drought, III, 72.  
 fermentation, growth, and respiration of, effect of oxygen on, III, 652.  
 lithium in, III, 357.  
 Marquis, growth of, and soil temperature, III, 72.  
 winter, cold-resistance of, III, 357.  
 zinc deficiency in, III, 722.

Wheatmeal, high-extraction, digestibility of, III, 826.

Whiteness, measurement of, I, 185.

Whitlockite, isotypism of, with palmierite, I, 355.

Whooping cough, immunisation of, age factor in, III, 66.  
 prevention and treatment of, III, 65.  
 X-ray changes in lungs in, III, 207.  
 treatment of, with ascorbic acid, III, 472.  
 See also Pertussis.

Willemite, formation of, from solid zinc oxide and silica, I, 274.

Wind, sirocco, physiological effect of, III, 845.

Witherite, heat of formation of, I, 367.

Wogonin 7-acetate, II, 149.

Wolff rearrangement, II, 92.

Wolfman duct, Müllerian duct in relation to, and malformations, III, 80.

Wollastonite, heat content of, I, 116.

Women, androgen therapy in, III, 128.  
 Japanese, fertility of, III, 386.  
 normal, sex cycle of, III, 452.

Wood, cocobole, dermatitis due to, knife-handles made of, III, 71.  
 distillation of, gas from, electric discharge in, I, 371.  
 fossil, Isle of Rum, I, 348.  
 fungi rotting. See under Fungi.  
 hydrogenation of, II, 158.  
 maple. See Maple wood.  
 mesquite. See Mesquite wood.

Wool, cystine disulphide linkages in, action of formaldehyde on, III, 612.  
 proteins, anion affinity of strong acids for, I, 238.  
 structure of, I, 354.

Wool fibres, "particles" in, and their relation to structure, III, 35.

Work, physiology of, in relation to thermal environment, III, 844.  
 See also Muscular exercise.

Workmen, vitamin survey of, III, 828.

Worms, army, southern. See *Prodenia eridania*.  
 earth-, common, substances secreted by, III, 822.  
 head regeneration in, III, 284.  
 survival time of, at raised temperatures, III, 247.  
 eel. See Eelworms.  
 hook, infection with, quinine levels in blood and urine in, dogs, III, 924.  
 pin. See *Enterobius vermicularis*.  
 tape, removal of, from chickens, III, 631.

Wounds, accidental, III, 338.  
 bacteriology of, III, 494.  
 cerebral, sulphanilamide and sulphapyridine in, III, 767.  
 epithelialisation of, effect of hypophysectomy on, III, 809.

Wounds, experimental, cod-liver oil treatment of, III, 708.  
 from high-velocity missiles, III, 462.  
 healing of, effect on, of blue and red light, III, 340.  
 of pituitary extract, III, 123.  
 of starvation and vitamin-B complex deficiency, III, 908.  
 of sulphanilamide, III, 48.  
 infection from, III, 338.  
 transfer of, in hospital, III, 349.  
 infection of, III, 346.  
 myiotic,  $p_H$  of, in sheep and goats, III, 322.  
 skin, healing of, effect of urea in sulphonamide base on, in rabbits, III, 705.  
 treatment of, with sulphanilamide, III, 628.

*Wuchereria bancrofti* in the Sudan, III, 347.

## X.

Xanthic acid, esters, decomposition of, II, 131.  
 salts, identification of alcohols with, II, 343.

Xanthine, synthesis of, II, 237.

Xanthomata, cholesterol and cholesteryl ester content of, III, 149.

Xanthomatosis, hereditary, III, 474.

Xanthopterin, synthesis of, II, 33.

*Xanthoxylum clava-herculis*, insecticidal principle in bark of, III, 425.

Xenon, isotopes, separation of, I, 245.  
 m.p.-pressure curve of, I, 89.  
 production of ion pairs in, with X-rays, I, 126.  
 triple-point pressure of, I, 245.

*Xenopus*, embryo, pars intermedia of, functional activity of, III, 27.

*Xenopus laevis*, endocrine activity in, plasma-inorganic phosphate associated with, III, 306.  
 fat bodies and deposits of, seasonal variations and sexual differences in, III, 566.

$\delta$ -Xenysemicarbazide, *p*-nitro-, and its derivatives, II, 88.

$\delta$ -*p*-Xenysemicarbazide, and 4'-nitro-, and their hydrochlorides, II, 169.

*Xestobium rufovillosum*. See Beetles, death-watch.

*Xiphophorus helleri*, effect on, of gonadotropic hormone, III, 813.

Xylan, utilisation of, III, 332.

Xylene, solutions of polystyrene in, I, 327.  
 o-Xylene, ozonisation of, II, 191.  
 m-Xylene, alkylation of, orientation in, II, 398.  
 o-4-Xylenol 3:5-dinitrobenzoate, II, 317.  
 p-2-Xyldine, 5-nitro-, hydrochloride, II, 398.  
 o-4-Xyldine, preparation of, II, 8.

Xyldinomethylenecamphors, stereoisomeric, II, 417.

Xylitol, crystalline, II, 389.

o-Xyloquinol dimethyl ether, II, 267.

Xylose, antagonism of, to sulphanilamide, III, 851.

D-Xylose tetrapropionate, II, 79.

*s-m*-Xylylhydrazine, and its benzoyl derivative, II, 377.

$\beta$ -4-o-Xylyl- $\alpha$ -methyl-*n*-butyric acid, II, 233.

$\gamma$ -4-o-Xylyl-*p*-methyl-*n*-valeric acid, II, 233.

$\gamma$ -4-o-Xylyl-*n*-valeric acid, II, 233.

## Y.

Yakriton, III, 244.

Yatanine, use of, as anti-amœbic drug, III, 481.

Yaws, spirochaetes of, viability of, in desiccated blood-serum, III, 67.

Yeast, aneurin absorption and phosphorylation by, III, 849.  
 baker's, respiration of, III, 936.  
 budding and conjugation in, III, 849.  
 carboxylase from, activity of, III, 640.  
 inhibition of, by fission products of NV-dimethylaminoozobenzene, III, 640.  
 cytochrome-*b*<sub>2</sub> from, III, 418.  
 degenerated, characteristics of, III, 778.  
 determination in, of pantothenic acid, III, 832.

**Yeast**, effect on, of carcinogenic hydrocarbons, III, 936.  
 of X-rays, III, 933.  
 enzymes of, amylolytic, II, 251.  
 film-forming, III, 555.  
 growth of, in pentoses, III, 59.  
 inhibition of, by sulphonamides, neutralised by *p*-aminobenzoic acid, III, 420.  
 interchange of ammonium and potassium ions in, III, 299.  
 invertase of, activity of, in relation to oxidation-reduction potential, III, 419.  
 irradiated, nucleic acid from, III, 490.  
 lactic dehydrogenase of, III, 417.  
 mannan from, II, 81.  
 metabolic products from, III, 778.  
 mineral content of, III, 556.  
 phosphate requirement of, III, 173.  
 potassium in, III, 342.  
 production and use of permanently altered strains of, III, 174.  
 proteins of. See under Proteins.  
 red. See *Sporobolomyces*.  
 respiration of, action of sulphonamides on, III, 850.  
 activity metabolism separated from, III, 490.  
 sterols of, II, 58.  
 thiosugar of, II, 302.  
 tumour-growth prevention by injection of, III, 698.  
 See also *Saccharomyces galactosus* and *hanseniaspora valbyensis*.  
**Yeast cells**, baker's, starved, carbohydrate metabolism in, III, 266.  
 fermentation by, Pasteur effect in, III, 59.  
 permeability of, for fluorides, III, 174.  
 proliferation of, stimulated by adenine nucleotides and growth factors, III, 936.  
 respiration of, effect of mercury on, III, 849.  
 ultra-violet-injured, proliferation-promoting activity of, III, 717.  
**Yeast extracts**, effect of, on bud dormancy, III, 275.  
 on gastric secretion, III, 142.  
 on tumours in mice, III, 402.  
 protection by, from depressant effects of germicide on skin respiration, III, 914.  
**Yeast juice**, effect on, of dinitrophenols, III, 266.  
**Yeast-nucleic acid**, electrophoresis of, with ovalbumin, III, 487.  
**Yeast-ribonucleic acid**, constitution of, II, 238.  
**Yellow O.B.** See 1-*o*-Toluenazo-2-naphthylamine.  
**Yellow fever**, immunity to, in Uganda, III, 497.  
 in Africa, III, 352.  
 virus, localisation of, in central nervous system, III, 944.  
**Yohimbine**, action of, on dilator iris, III, 840.  
 pharmacology of, III, 708.

**Youngina**, hind foot and fifth metatarsal of, III, 505.  
**Ytterbium**, isotopes of, I, 255.  
**Ytterbium alloys**, with mercury, I, 110.  
**Ytterbium determination and separation** :—  
 determination of, I, 114.  
 spectrophotometrically, I, 278.  
 separation of, by its amalgam, I, 307.  
**Yttrium**, of 100-day half-life, disintegration of, I, 35.  
 position of, in rare-earth series, I, 335.  
 radioactive, isolation of, and its properties, I, 335.  
**Yttrium salts**, diffusibility and hydrolysis of, I, 205.

**Z.**

**Zanthoxylum**. See *Xanthoxylum*.  
**Zapote borracho**. See *Lucuma salicifolia*.  
**Zea**, maize, pollen, germination of, III, 500.  
 seeds, glycogen and starch from, structure of, II, 82.  
**Zein**, hydrolysis of, II, 123.  
 by sulphuric acid, II, 211.  
 peptisation of, in ethyl alcohol, I, 327.  
**Zeolites**, binding of water in, I, 344.  
 reactions of, with sparingly-soluble substances, I, 110.  
**Zinc**, atomic weight of, I, 255.  
 co-precipitation of, with lead sulphate, I, 154.  
 crystals, lattice distortion in, during twinning, I, 356.  
 X-ray scattering by, I, 389.  
 thermal expansion of, I, 321.  
 crystal orientation of, in eutectic melts with cadmium, I, 358.  
 extraction of, from ammonia buffers, I, 274.  
 isotope, mass 65, radioactivity of, I, 34.  
 passivity of, anode layer in, I, 241.  
 plasticity of, I, 356.  
 powder, cathodic deposition of, from zincate solutions, I, 303.  
 γ-rays from, I, 128.  
 self-diffusion of, I, 322.  
 thermal energy of, I, 226.  
**Zinc alloys**, with cadmium, eutectic, potential of, I, 268.  
 with cobalt and with iron, I, 394.  
 with copper, and with iron, diffusion formation of, I, 358.  
 with gold, β-phase in, I, 53.  
 with silver, structure of, I, 18.  
**Zinc compounds**, absorption and excretion of, III, 916.  
 content of, and of carbonic anhydrase in tissues of vertebrates, III, 847.  
 dietary, retention of, in childhood, III, 828.

**Zinc compounds**, effect of, on carbonic anhydrase activation, III, 776.  
 poisoning by. See under Poisoning.  
**Zinc chloride**, poisoning by. See under Poisoning.  
 viscosity of aqueous solutions of, I, 358.  
 chromate, reactions in formation of, I, 274.  
 ferrite, formation of, I, 276.  
 hydroxide, analysis of, in solution with sodium hydroxide, I, 248.  
 thixotropy of laminar films of, I, 20.  
 β-hydroxide, thermal reaction of, with γ-iron hydroxide, I, 404.  
 oxide, electrical conductivity of, I, 136.  
 reaction of, with chromic oxide, I, 274.  
 reduction of, by carbon monoxide, I, 99.  
 stabilisation of suspensions of, I, 20.  
 surface reaction of hydrogen selenide on, I, 70.  
 peroxide, preparations of, III, 711.  
 sulphate, effect of, on plants, III, 654.  
 sulphates, I, 328.  
 sulphide, foreign atoms in, I, 92.  
**Zinc detection, determination, and separation** :—  
 detection of, I, 307.  
 determination in, of cadmium, copper, iron, and lead, I, 154.  
 determination of, in plant materials, III, 656.  
 with salicylaldehyde, I, 73.  
 separation of, from copper and lead, I, 278.  
**Zinc-black**, electron microscopy of, I, 361.  
**Zinc iron spinel**, formation of, I, 404.  
**Zinc ores** containing lead, European, I, 347.  
 Mississippi Valley type, I, 347.  
**Zincite**, crystal structure of, I, 219.  
**Zippers**, nickel dermatitis caused by, III, 721.  
 use of, in Friedman test, III, 526.  
**Zirconium**, crystal structure of, with dissolved hydrogen, I, 11.  
 magnetic susceptibility of, I, 11.  
 zirconium alloys, with copper, I, 53.  
**Zirconium compounds**, with transition elements, I, 305.  
**Zirconium tetrachloride**, electrical conductivity of, mixed with sodium chloride, I, 368.  
 hydroxide, sols, coagulation and gelation of, viscosity during, I, 365.  
 dioxide, equilibrium of, with magnesia, I, 174.  
 hydrogels of, I, 142.  
 sols, surface of particles in, I, 172.  
 periodate, I, 70.  
 silicate, specific heat of, at low temperatures, I, 50.  
**Zirconium separation** :—  
 separation of, from hafnium, by ferrocyanide method, I, 341.  
*Zygosaccharomyces nectarophilus*, III, 556.  
*Zygosaccharomyces rugosus*, III, 556.  
**Zymasis**, III, 358.

## ERRATA.

### ABSTRACTS, A., I, 1941.

Col.	Line.	
40	46	For "R. H. Jones" read "R. N. Jones."
44	19	For "3.29 μ." read "3.28 μ."
54	29	For "or" read "and."
59	30	For "1165" read "1176."
74	19*	For "position" read "portion."
1942, I.		
1	2*	For "rubes" read "tubes."
11	19*	For "Filtzwilliam" read "Fitzwilliam."
69	34	For "F. Franck" read "J. Franck."
114	26	For "Oldenburg" read "Oldenberg."
172	24*	For "Merril" read "Merrill."
239	11	For "Narwaini" read "Narwani."
260	2*	For "Montrole" read "Montroll."
287	33*	For "Sodium hydroxide" read "Sodium hydride."
294	9	For "substanes" read "substances."
314	1*	For "U. I. Komarewsky" read "V. I. Komarewsky."
344	31	For "Rebinder" read "Rehbinder."
369	14*	For "Babinovitch" read "Rabinovitch."
1942, II.		
42	26	For "Tischler" read "Tishler."
55	15*	For "Ishimuri" read "Ishimura."
124	11	For "napatolactone" read "nepetolactone."
146	17	For "Me <sub>2</sub> ether" read "Me <sub>1</sub> ether."



Col.	Line.	
147	—	<i>In the formulae for (II) and (III) the "CH" adjacent to C<sub>(17a)</sub> should be "CMe."</i>
165	1*	<i>For "Fletcher" read "Pletcher."</i>
204	23* and 22*	<i>For "Since . . . sequence" read "Since the order of inductive electron-release is known to be Bu<sup>γ</sup> &gt; Pr<sup>β</sup> &gt; Et &gt; Me &gt; H, the new results prove the sequence Me &gt; Et &gt; Pr<sup>β</sup> &gt; Bu<sup>γ</sup> &gt; H."</i>
217	26	<i>For "Charrier" read "Chabrier."</i>
254	18*	<i>For "T. Walker" read "J. Walker."</i>
259	33*	<i>For "Sanariya" read "Sahariya."</i>
275	10	<i>For "Crotalaria grantiana" read "Crotalaria grantiana."</i>
277	20*	<i>For "m.p. 332°" read "m.p. 132°."</i>
339	26*, 28*, and 30*	<i>For "Teonnies" read "Toennies."</i>
366	13*	<i>For "coprosterol" read "coprosterol."</i>
381	22*	<i>For "pancrease" read "pancreas."</i>
391	30	<i>For "Junász" read "Juhász."</i>
1942, III.		
8	36*	<i>For "Bassem" read "Bassen."</i>
30	2	<i>For "Quigler" read "Quigley."</i>
30	3	<i>For "Radgow" read "Radzow."</i>
48	21*	<i>For "Simpson" read "Sampson."</i>
56	28*	<i>After "blood" insert "S. Kan."</i>
159	34	<i>For "Mann" read "Main."</i>
166	12* and 13*	<i>For "epival" read "evipal."</i>
194	1*	<i>For "Corkhill" read "Corkill."</i>
199	35	<i>For "Rapport" read "Rapoport."</i>
200	13*	<i>After "Fishback" add "S. A. Guttman, and E. B. Abramson."</i>
208	37*	<i>For "Thanhauser" read "Thannhauser."</i>
233	14*	<i>For "Sanamouje" read "Sakanouje."</i>
251	15	<i>For "Waghorn" read "Woglom."</i>
255	25	<i>For "Rush" read "Rusch."</i>
260	20*	<i>For "Rot" read "Röot."</i>
266	32	<i>For "E. L. Massart" read "L. Massart."</i>
275	32	<i>For "bulsamina" read "balsamina."</i>
289	23*	<i>After "1," add "per sq. m. of body surface."</i>
307	42	<i>For "Corkhill" read "Corkill."</i>
308	1* and 2*	<i>For "Fujimoro" and "Nizuno" read "Fujimori" and "Mizuno."</i>
334	7	<i>For "N. F. Sognnaes" and "J. F. Volka" read "R. F. Sognnaes" and "J. F. Volker."</i>
334	26	<i>For "Neckeles" read "Necheles."</i>
335	18*	<i>For "Barack" read "Barach."</i>
336	16	<i>For "Dinland" read "Finland."</i>
351	16*	<i>For "Regame" read "Regamey."</i>
352	13*	<i>For "L. P. Stream, G. J. Stream" read "L. P. Streaan, G. J. Streaan."</i>
420	14*	<i>For "guanidine" read "guanine."</i>
433	32*	<i>For "Loufbourow" read "Loofbourow."</i>
448	28*	<i>For "Neilsen" read "Nielsen."</i>
455	8	<i>For "H. H. Pearlman" read "W. H. Pearlman."</i>
472	42	<i>For "Rolli" read "Ralli."</i>
480	35	<i>For "Cosgrave" read "Cosgrove."</i>
492	9*	<i>For "Lactobaccillus" read "Lactobacillus."</i>
532	3*	<i>For "Carausius" read "Carassius."</i>
549	15	<i>For "Rovenstiner" read "Rovenstine."</i>
589	8*	<i>For "Olmsted" read "Olmsted."</i>
592	14*	<i>For "Severinghaus" read "Sevringhaus."</i>
600	39*	<i>For "Wegenen" read "Wogenen."</i>
628	23	<i>For "F. G. M. Bullova" read "J. G. M. Bullova."</i>
631	41*	<i>For "Sloan" read "Sloane."</i>
636	43	<i>For "M. O. Calvery" read "H. O. Calvery."</i>
637	39*	<i>For "Fryberg" read "Freyberg."</i>
664	32*	<i>For "Taguon" read "Tagnon."</i>
683	14	<i>For "Walze" read "Walzl."</i>
687	15*	<i>For "J. Q. Griffith" read "J. Q. Griffith, jun."</i>
693	24*	<i>For "Herdegger" read "Heidegger."</i>
697	12*	<i>For "E. Duran-Reynals" read "F. Duran-Reynals."</i>
711	34	<i>For "M. van Winkle, jun." read "W. van Winkle, jun."</i>
719	25*	<i>For "Boisvent" read "Boisvert."</i>
726	22	<i>For "Blondau" read "Blandau."</i>
729	7*	<i>For "Holm" read "Hahn."</i>
730	5	<i>For "Holm" read "Hahn."</i>
733	35	<i>For "Souter" read "Sorter."</i>
734	36	<i>For "Cournaud" read "Cournaud."</i>
754	23	<i>For "Kerstens" read "Karstens."</i>
755	23*	<i>For "E. D. Lillie" read "R. D. Lillie."</i>
773	22	<i>For "Fodtz" read "Foltz."</i>
795	10	<i>For "Hohn" read "Hahn."</i>
802	6	<i>For "Wearer" read "Wearn."</i>
816	19*	<i>For "Gastrojeennolic" read "Gastrojejunocolic."</i>
824	4	<i>For "Green" read "Greene."</i>
828	17*	<i>For "Schendorfe" read "Schnedorf."</i>
840	35	<i>For "Antopo" read "Antopol."</i>
842	2*	<i>For "W. E. Evans" read "W. E. Evans, jun."</i>
842	1*	<i>For "J. C. Krantz" read "J. C. Krantz, jun."</i>
849	40*	<i>For "Rhodotorulu" read "Rhodotorula."</i>
856	5	<i>For "L. R. Webster" read "L. T. Webster."</i>
883	15*	<i>For "W. E. Rahm" read "W. E. Rahm, jun."</i>
886	18*	<i>For "Jevis" read "Jervis."</i>
897	9*	<i>For "deoxycorticosterone" read "deoxycorticosterone."</i>
897	28	<i>For "Sebrall" read "Sebrell."</i>
899	36*	<i>For "coproporphrin" read "coproporphyrin."</i>